UNIVERSITY OF GONDAR

COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

KNOWLEDGE AND UTILIZATION OF INFORMATION TECHNOLOGY AND ASSOCIATED FACTORS AMONG BAHIR DAR HEALTH SCIENCE COLLEGE STUDENTS, BAHIR DAR, NORTH WEST ETHIOPIA

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Examiner

DEDICATION

This paper is dedicated to my parents **Ato Demeke Birle** and **W/ro Bizunesh Tekle** and my sister **W/rt Bethlehem Demeke.** My under graduate and post graduate study is made possible through the help and ambition of them. God bless and give longer life for them.

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ACRONYMS:

BHSC: Bahir Dar Health Science College

CHIME: Centre for Health Informatics and Multi professional Education

CI: Confidence Interval

COR: Crude Odds Ratio

FMOE: Federal Ministry of Education

FMOH: Federal Ministry of Health

HCPs: Health Care Providers

HIT: Health Information Technology

ICT: Information and Communication Technology

IT: Information Technology

MLT: Medical Laboratory Technology

MOFED: Ministry of Finance and Economic Development

MUCHS: Muhimbi University College of Health Science

PASDEP: Plan for Accelerated and Sustained Development to End Poverty

PC: Personal Computer

PPT: Power point

SPSS: Statistical Package for Social Science

UK: United Kingdom

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ABSTRACT

Background: Rapid advancement and the increasing availability of electronic health information are revolutionizing health care systems worldwide. Equipping the health professionals with appropriate knowledge and skill of Information Technology during their stay in the health science colleges is vital to implement the information technology in the health sector as to the national strategy. However, there is no adequate information on the level of knowledge and utilization patterns of IT and associated factors among health science students in Ethiopia.

OBJECTIVE: The aim of study is to assess knowledge and utilization of information technology and associated factors among Bahir Dar health Science College students, Amhara Regional state, North West Ethiopia.

METHODS: An Institutional based cross-sectional study was conducted from June 27 to July 01, 2011 on regular students of Bahir Dar Health Science College. Stratified sampling was used to get the total sample size of 422 participants. A pre-tested and structured self-administered questionnaire was used to collect data on Knowledge and utilization of information technology and associated factors. Data analysis was done using SPSS version 16.0 soft ware package.

RESULTS: A total of 417 students were studied with response rate of 98.8%. The study indicated that 75.3% of the respondents had satisfactory knowledge of Information Technology. Utilization of information technology among students was 30.9%. Field of study (AOR=3.24, 95%CI= 1.21, 8.67), Mother's educational status (AOR=2.06, 95%CI= 1.14, 3.73), IT skill ((AOR=3.84, 95%CI= 2.20, 6.72); AOR=9.13, 95%CI= 3.36, 24.76)), IT training status (AOR=2.26, 95%CI= 1.38, 3.69) and IT accessibility in the college (AOR=2.25, 95%CI= 1.32, 3.85) have significant association with information technology utilization.

CONCLUSION: Information technology utilization in the study area is low. Mother's educational status, previous IT training status, Field of study, IT skill and IT resources accessibility in college were important factors affecting Information technology utilization. Resources should be allocated from the government to better develop the IT infrastructure in the health science colleges. The existing IT course in the curriculum should be strengthened interms of content, credit hour, mode of delivery and computer lab sessions to make it more skill oriented. Bahir Dar Health Science College administrators have to provide easier and equitable access to Information Technology resources for all fields of studies.

Key words: IT, IT Skill, IT Knowledge, IT utilization

1. INTRODUCTION

1.1. STATEMENT OF THE PROBLEM

The computer revolution and Information Technology (IT) have transformed modern health care systems in the areas of communication, teaching, storage and retrieval of medical information (1). The global shift toward the use of information and communication technology (ICT) in health care and practice has been shown to enhance both the educational opportunities and the support provided to students and healthcare professionals (2). Information and communication technologies (ICT)' importance in education is widely recognized as an instrument to improve the quality of teaching and learning activities (3).

The development of the Internet, as a vehicle for World-wide communication, and the emergence of the World Wide Web, has made instantaneous access to much of the entire body of medical information an exciting one. Internet is now one of the most important sources of information for students in institutions of higher learning throughout the world. It has also become a popular medium for delivering educational materials and being used as an important source of information for medical research. The Internet has been used for medical education in diverse ways including teaching of organs, diagnosis of diseases, and conduct of medical examinations (4).

A large amount of medical literature and information is now available electronically and even medical teaching is becoming electronically based in some developed countries. In many developed countries, computer literacy among medical students is high (5).

On the other hand, the development of information technology in developing countries is slow due to limited accessibility of computers and internet, at home and on campus. In contrast to its extensively acknowledged importance, computer access and computer related skills demonstrate a wide diversity, both regional and within students and faculties of the same institution. This may be due to the limited financial resources available to maintain IT infrastructure in developing countries whereas diversity among academics could be explained by attitudes of academic staff towards information technology (6).

Although the importance of computer literacy in today's rapidly changing environment cannot be denied, institutional provision of opportunities and inclusion of such skills into their curriculum for health science students to acquire the necessary technical skills has been comparatively slow and inconsistent (8, 9).

One of the basic concerns with this regard is that the spread of information and communication technologies in developed countries is leaving the rest of the world behind. In most of the developing countries including Ethiopia many programs have concentrated on increasing the number and spread of ICT infrastructures without adequate effort on the capacity building (i.e. Skilled human resources) (7).

The Government of Ethiopia believes that exploiting information technology is central to promote growth and reduce poverty. One of the ICT strategies in Plan for Accelerated and Sustained Development to End Poverty (PASDEP) is mainstreaming the use of ICT in all sectors of the economy. A central part of this strategy is applying the principle of modern ICT to the delivery of services and administration of government, to improve effectiveness and reduce costs. Accordingly, health is one of the main service delivery sectors that need mainstreaming the ICT to provide quality health care delivery. Equipping the health professionals with appropriate knowledge and skill of ICT during their stay in the medical school is vital to implement the information technology in the health sector as to the national strategy (10).

However, the reality in the ground is different according to the ICT penetration and usage base line study conducted in Ethiopia that indicated only 2% of the sampled health professionals have formal college or university ICT training (11)**.** This may be an evidence to say much should be done in the health science colleges in the area of increasing Information Technology skills for the prospect graduates.

The Knowledge and utilization patterns of Information Technology among health science students is not known and as to my knowledge there is no published reports on the knowledge and utilization patterns of Information Technology among health science students in Ethiopia particularly in Bahir Dar health science college. Hence, this study aimed to identify associated factors contributing to Information Technology utilization among health science students.

1.2. LITERATURE REVIEW

1.2.1. The role of Information Technology in health

The emerging need of computer knowledge has made an impact in every field, including the medical world. Since the development of the computer and the evolution of the Internet, Information Technology (IT) has had a positive impact on health care delivery systems worldwide, particularly in the areas of disease control, diagnosis, patient management and teaching (13). In general, clinical practice has been tremendously improved by the technological interventions. As a result of this revolution, the application of ICT especially in the areas of information access, storage, retrieval, analysis and dissemination of information is becoming a routine activity in the health care system. This makes it almost mandatory for the healthcare professionals to be well versed with this technology in the developed world (14, 12).

Moreover computerization could resolve certain problems and derive benefits including reduction in clerical work required of professionals, reduction in printed forms, centralized patient care data, etc (15). The development of online databases plays a vital role in packing and delivery of medical research as the same time it allows medical professionals throughout the developed world immediate access to hundreds of e-journals at the touch of a button, a striking contrast to the plight of many of their colleagues in developing countries who are forced to search empty libraries (7, 5).

Rapid advancement in information technology and the increasing availability of electronic health information are revolutionizing health care systems worldwide. Innovations in technology have made portable electronic devices, network database applications, electronic medical records, and computer software programs increasingly integrated into many health care settings. These changes create the educational need for health care providers to become proficient at appropriately using technology to deliver high quality health care services. However, the impact of IT on medical practice in the developing world is not significant due to lack of awareness and access to computer (15).

1.2.2. Accessibility of Information Technology

The use of computer and Internet technology by health science students will result in more effective medical education, including teaching, medical examination, and diagnosis of disease. However, these gains will only occur when students have increased access to these technologies (4).

Several studies in the accessibilities of IT among medical students and health workers showed a magnificent difference between the developed and developing world. In survey of European Universities Skill in ICT of students and Staff (SEUSISS) project (2001-2002) the number of personal computer (PC) ownership at the start of studies varied from 54% (Abo, Finland) to 89% (Groningen, Netherlands). Recent studies have however shown remarkable improvements in these figures (14, 16). But much is not reported in the literature about the level of Internet access amongst health science students in Africa.

A study conducted in Medical university of Vienna by the year 2005 showed almost all students (94%) have access to a privately owned PC, which is either owned by the students themselves (74%) or shared with family members or roommates (20%). Only 5% rely primarily on public computer facilities. In the same study the great majority of students also have access to the Internet (12).

Similarly a longitudinal study in Aarhus, Denmark by the year 2002 showed among the total first year medical students, 71.7% indicate they had access to computer at home. In this study Internet access at home was also assessed and it was found to be increased from 20.4 to 62.9% in the study period and there was an even more pronounced increase in use from any location, of Internet and e-mail (16). On the other hand in developing countries, the Internet is still only available to a minority of health professionals, and often it is not available at the point of care (17).

The access to computer of medical students in Africa is lagging behind when compared to the developed world. A study in the MUCHS, Tanzania in the year 2003, showed the medical student to computer ratio is 100:1. It is too far behind when it is compared to 35:1 in Portugal, 9:1 in the UK and 5:1 in Norway. With regard to ownership of computer

at home 76% of MUCHS students didn't have a computer at home. This figure is in stark contrast with the availability of computer at home which is 71.7% Aarhus, Denmark and 86% in California, USA (7, 16). Similarly a study in Ile Ife university teaching hospital, Nigeria by the year 2004 showed only 26% of students owned a computer (10). Another similar study in Nigeria on Medical students from a resource poor setting showed that, 90% had no regular access to a computer and none owned a computer (5). Even if computer access is vital in acquiring skill of Information Technology, almost all of the studies conducted in Africa indicated that access to computer is very limited.

A base line study on ICT penetration and usage in Ethiopia 2002 indicated that 51% of health workers gain access to computers in their work place. Private computer centres are the second most important place (46%) and only 12% of the sampled health professionals had computer access at home of which majority of them are from Addis Ababa. It should also be realized that access to printed materials is very much limited in the health facilities, especially outside of Addis Ababa (11).

Therefore providing students with computer access in addition to the theoretical training by placing computer stations in the library or by developing a dedicated computer laboratory space have been the most common solutions adopted by institutions to ensure the skill of health science students on IT before they leave the campus. As a result of the aforementioned facts recently some medical schools have considered policies recommending that students acquire a PC for their medical education, or even requiring them to do so (18).

1.2.3. Knowledge towards Information Technology

In this Information Technology era the need for health science students to be computer literate is no longer an issue for debate. Currently using computerized medical records, retrieving patient data at a distant and accessing medical journals and literature electronically is common. Hence, acquiring basic knowledge on computer and understanding the basics of Internet among health professionals is crucial (19). However, several studies in the literature suggest many health science students feel that they lack computer skills and majority of them are interested in learning more about computers while attending health science colleges (20).

Study conducted in Nigeria teaching hospital showed that from the total respondents 76.7% of the medical students demonstrated a good knowledge on computers (13). The study from MUCHS, Tanzania indicated that only 52% of students felt that they understood the basic terminology and concepts of computing (7). Similarly a study in Nigeria on Medical students from a resource poor setting showed that 50.6% students had knowledge of computer technology and it use. 60% of the students who were familiar with computers acquired their knowledge through self-learning efforts while 37.5% attended a formal training. The main reason for lack of computer knowledge was lack of time and lack of access to a computer. 80% percent of all students would like computer education to be included in medical school curriculum (5).

Based on the ICT penetration base line survey conducted in Ethiopia the overall computer literacy among health professionals was 39% with no visible differences between Addis Ababa and regional towns. Personal effort is the main method (67%) of acquiring ICT skill, which is similar to other studies followed by short-term computer training (33%), formal College or university IT training is reported by only 2% of the respondents (11).

These all facts in the literature indicate delivering computer courses at the Health Science colleges is neglected (6). More over majority of the literatures suggest the need for training of health science students in the use of computer in their education. To that end, determining the gap of health science students for acquiring computer skill in terms of training or accessibility should be assessed before starting any intervention.

1.2.4. Utilization of Information Technology

Clearly, health science students need to acquire computer and information management skills at the beginning of their education. As indicated in many literatures most of the latest reference materials are accessible electronically; this is also an assertion supported by a recent two-year survey at the University Of Illinois College Of Medicine at Rockford (8). In support of the above fact a study conducted in Austria in 2004 showed that 75% of university and high school students used a computer daily for different purpose especially for e-mail communication (94%), Internet for information

research (97%) and use of word process is very common (82%), but students are less familiar with other program types (9).

Majority of the studies conducted in the developed world showed the skill of students in using IT is high which were showed by 84% of undergraduate students in Glasgow, UK, 95% undergraduate dental students in Oulu, Finland. There is also an encouraging trend of IT utilization in some of the East and Central Asia countries like 94% and 95% of medical students in Malaysia and Saudi Arabia respectively use computers for their medical education (4, 21).

Majority of studies conducted in Africa showed that the skill and utilization of IT among medical students as well as health care providers were very poor. In support of the above idea a study from Nigeria teaching hospital on Computer and Internet use by first year clinical and nursing students showed that, only 43% of students could use the computer. In the same institution it was found that 80% of the medical and dental students in their final year had used the computer; however, the use of software applications was poor, with computer games being the most frequently used (19%) followed by word processing software (18%). The Internet and email were used by 58%, but only 23% had used the Internet for medical research (14, 4).

In similar context a study from Tanzania medical university college indicated that about 74% of medical students never use a computer as part of any course either at school or university. Out of those who are using (25%) the median hours per week of computer use was 3.8 (2–10). At this time their computer skill was also measured and found to be very low. The method of measuring skill is adapted from the Center for Health Informatics and Multi professional Education (CHIME) in UK, students with an overall score of less than 10 are considered to have low skills and are offered peer mentoring training. Using this criterion, around 50% of the Tanzanian medical students would fall into the low skills category compared with 9% of first year medical students in 2002. All these studies concluded that utilization of IT was poor amongst the resource poor sub Saharan African countries (7, 13).

Similarly, in Ethiopia only 33% of the health workers use computers for various purposes. The single most important purpose of using computers is word processing and related activities (office tools) for 81% of the reporting respondents. Some 26% of the sample respondents use the Internet. As expected, e-mail is the most important reason for using the Internet (90%) (10,11).

Factors affecting Knowledge and Utilization of Information Technology

In spite of the limited studies conducted on factors of IT both in the developed and developing world especially in Africa, most of the studies indicated that the Knowledge and utilization of IT among health science students were very poor. In regard to this, study conducted in Medical school of Ahmadu Bello University, Zaria, Nigeria shows 60% of medical students acquired their computer knowledge through self-learning efforts while 37.5% attended short periods of formal training. The main reason for lack of computer knowledge was lack of time and lack of access to a computer (5).

Another study conducted at school of nursing in Central Greece showed high cost was reported as the main obstacle 34.2% for low internet Utilization in students. Senior students' competencies were better (22). Similar to these in Marrakech, Morocco among 3rd and 6th year medical students shows lack of information about useful medical websites (63.8%), overcharged students schedule (55.9%), lack of knowledge of internet use and the difficulties to find appropriate information (40%) are the main reasons for no or less utilization of IT for medical education (23).

Concerning Ethiopia the barriers identified for ICT utilization in the health sector during the base line survey on ICT penetration and usage in Ethiopia were Lack of necessary equipment (accessories) and absence of ICT strategic plan. In addressing the possible factors for ICT utilization the current ICT strategy of the country is encouraging especially in scale up of ICT infrastructures at all level of service delivering sectors. Hence the medical institutions should take this as a good opportunity to incorporate computer courses in their medical education then Health Science students may acquire appropriate skill for their future carrier (11, 10).

1.3 JUSTIFICATION OF THE STUDY

Information technology facilities have turned the world into a global village and most information is published electronically. It is already known that computers influence every sphere of human activity and bring many changes in medical education, healthcare and scientific research etc.

Computers can perform a wide range of activities that save time and help health care providers to be engaged in other patient care activities. The availability of quality applications for medical education in both the basic and clinical sciences makes it feasible for an institution to incorporate such applications into the existing curriculum. Accordingly, it is necessary to ensure the knowledge and utilization of Information Technology among those who deliver the service.

The Government of Ethiopia believes that exploiting information technology is central to promote growth and reduce poverty. One of the ICT strategies in Plan for Accelerated and Sustained Development to End Poverty (PASDEP) is mainstreaming the use of ICT in all sectors of the economy. A central part of this strategy is applying the principle of modern ICT to the delivery of services and administration of government, to improve effectiveness and reduce costs.

Accordingly, health is one of the main service delivery sectors that need mainstreaming the ICT to provide quality health care delivery. Equipping the health Professionals with appropriate knowledge and skill of Information Technology during their stay in the health science colleges is vital to implement the information technology in the health sector as to the national strategy.

Therefore this study is going to assess the knowledge of health science students on Information Technology and their utilization status and also the possible factors that influence using Information Technology for their academic purpose. In line with this, the findings will also provide baseline information for health science college administrators in planning ongoing information technology training for health science students.

2. OBJECTIVES

2.1. GENERAL OBJECTIVE

The main objective of this study is to assess knowledge and utilization of Information technology and associated factors among Bahir Dar Health Science College students, Amhara Regional state, North West Ethiopia.

2.2. SPECIFIC OBJECTIVES

- To determine respondents knowledge of Information technology
- To describe respondents Information technology utilization
- To identify associated factors of Information technology utilization among respondents

3. METHODS

3.1. Study design

The study design was an Institution based cross-sectional study.

3. 2. Study area and period

The study was conducted from February 25 - August, 2011 in Bahir Dar which is the capital city of the Amhara Regional state. The city is located approximately 578 km north-northwest of Addis Ababa. Bahir Dar is one of the leading tourist destinations in Ethiopia with a variety of attractions in the nearby Lake Tana and Blue Nile River. Based on the 2007 census result, Bahir Dar has a total population of 221,991; of whom 108,456 are men and 113,535 women. The population is inhabited with an estimated area of 213.43 square kilometres (24).

Regarding health institutions, Bahir Dar has one regional referral hospital and two private hospitals; and 4 health centers were found. Concerning education in the city there were one University (i.e. Bahir Dar University) and one government health Science College and 5 private health Science colleges were found. This study was conducted on the government health science college that means Bahir Dar Health Science College which was established in 1964 E.C. currently the college has 542 regular students out of which 155 were female students. There are five departments which are Nursing (which includes Midwifery and Clinical Nursing), Health information technology, Pharmacy, laboratory and Radiography departments. And it also has 87 staffs out of which 55 are academic and the remaining are administrative staffs.

3.3. Source population: The source populations were all Bahir Dar health science college students.

3.4. Study population: The study population included all regular students of the college.

Inclusion and Exclusion criteria

Inclusion criteria: All regular college of health science students.

Exclusion Criteria: - students who are seriously ill were excluded from the study.

3.5. Sample Size and Sampling techniques

I. Sample size: The required sample size of the study participants was determined by single population proportion formula (25).

$$n = \frac{(Z_{\alpha/2})^2 P (1-P)}{d^2} = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)^2} = 384$$

Assumptions;

n = the number of students to be studied;

Z = standardized normal distribution value for the 95% Confidence level, which is 1.96

P = Due to lack of previous studies showing the proportion of IT utilization and knowledge among health science students in the health science colleges of Ethiopia, the following assumptions were made: a prevalence of 50% IT utilization among health science students were assumed to get maximum sample size (p =0.5)

d = the margin of error was taken as 5%

By considering 10% non-response rate total sample size were 422.

II. Sampling technique: By assuming variation among different field of studies the required sample size were taken by simple random sampling method from each stratified departments according to their proportion. For simple random sampling open epi software were used by using the respondents ID number.

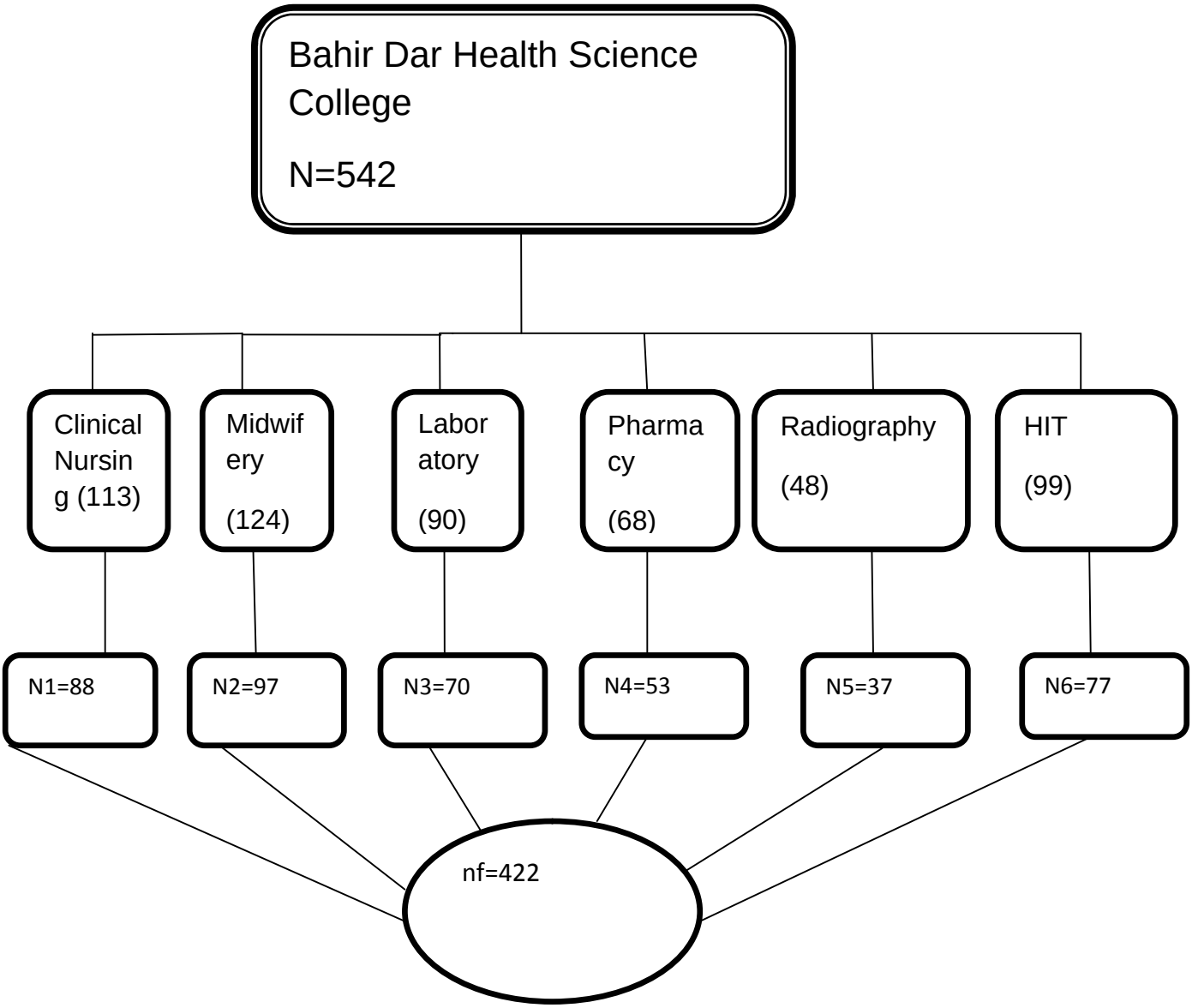

Figure-1 Schematic presentation of the sampling procedure BHSC, Bahir Dar, June, 2011

3.6. Variables of the study

Dependent variables: Knowledge of Information technology and

Utilization of information technology

Independent variables: Socio-demographic characteristics (age, sex, residence, field of study)

- Parental educational status
- Family monthly income
- Previous Information Technology training status
- Accessibility of Information Technology
- Personal computer ownership
- Current Information Technology course taken
- Information Technology knowledge
- Information Technology skill

3.7. Operational definitions (13):

Information Technology: a tool which helps to gather, manipulate, store, retrieve, and classify recorded information. Mainly focuses on respondent's knowledge, access and utilization of computer, Internet and electronic documents (like CD ROM).

Computer literacy: The level of familiarity of respondents with computers. It generally refers to the ability to use applications rather than to program.

Knowledge on Information Technology: Refers to the respondents' level of awareness on computer and its application. The minimum level for having knowledge on Information Technology refers to knowing basic terminologies related to computer hardware and software and Internet services.

Satisfactory knowledge on Information Technology: Respondents who scored mean value and above for a set of 18 basic Information Technology knowledge questions.

Unsatisfactory knowledge on Information Technology: Respondents who scored below mean value for a set of 18 basic Information Technology knowledge questions.

Access to Information Technology: The level of availability of computer, Internet, electronic documents for academic service needs of respondents in the Bahir Dar Health Science College.

Basic skill: If respondents are able to open the program and able to do some of the MS office program of the specified computer applications.

Average skill: Respondents having the basic skill and developed additional skills including the use of different software programs and able to operate the specified computer application regularly for academic purpose.

Advanced skill: Respondents knowledgeable of hardware and software and able to operate the specified computer application beyond the routine office application like troubleshoot, advise and teach others.

Information Technology Utilization: Refers to the routine as well as occasional use of computers and its applications including Internet browsing for the purpose of satisfying academic requirements.

Good utilization rate: Respondents who scored mean value and above for a set of seven utilization related questions.

Poor utilization rate: Respondents who scored below mean value for a set of seven utilization related questions.

3.8. Data collection Procedures

Data were collected by using a structured and pre-tested self administered questionnaire first prepared in English and translated in to Amharic and again translated to English for consistency.

Data was collected by six trained data collectors and supervised by two supervisors. The data collectors were diploma holders of IT background.

3.9. Data Quality control

The quality of data were assured by proper designing and pre-testing of the questionnaires on 5% of Bahir Dar health science college extension students, and training was given for data collectors and supervisors before the actual data collection. After data collection, questionnaires were reviewed and checked for completeness and relevance by the supervisors and principal investigator and the necessary feedback

were offered for data collectors. For controlling errors 10% of the questionnaire was double entered and also frequency checks were done.

3.10. Data Processing and Analysis

All the questionnaires were checked visually, coded and entered into SPSS version 16.0 soft ware package for analysis. Then data was cleaned to check for errors and missed values and any error identified was corrected. For controlling errors 10% of the questionnaire was double entered and also frequency checks were done. The data was analyzed using logistic regression to determine the effect of various factors on the outcome variable and to control confounding effect. The results were presented in the form of tables, figures and text using frequencies and summary statistics such as mean, standard deviation and percentage to describe the study population in relation to relevant variables. P-value lees than or equal to 0.05 were taken as cut of value to be significant.The degree of association between independent and dependent variables were assessed using odds ratio with 95% confidence interval.

3.11. Ethical Consideration

Ethical clearance was obtained from Institutional Review Board (IRB) of University of Gondar. Permission to conduct the study was obtained from the Bahir Dar health Science College.

Informed consent was obtained from each study participant. Each respondent were informed about the objective of the study that will contribute necessary information for policy makers and other concerned bodies. Any involvement in the study was after their complete verbal consent was obtained. They were also informed that all data obtained from them would be kept confidential by using codes instead of any personal identifiers and is meant only for the purpose of the study.

3.12. Dissemination of the Result

Results of this study will be disseminated through publication (local or international journals), presentation on annual Scientific meeting, conferences, seminars etc. A copy of it will be offered to University of Gondar School of Public Health, FMOH, FMOE, Amhara Regional Health Bureau, Bahir Dar Health Science College and other concerned bodies.

4. RESULTS

4.1. Socio-demographic Characteristics of the Respondents

A total of 417 respondents were included for the analysis of the study. Out of these 224 (53.7%) were rural residents making the overall response rate 98.8%.

Three hundred one (72.2%) of respondents were males, and the mean age of respondents was 21.13 with (± SD) of 1.832 and 339(81.3%) of the students were in the age range of 20-24 years.

Of the total students who participated in this study 97(23.3%), 88(21%) and 72 (17.3%) were Midwifery, Clinical Nursing and HIT students respectively. Among the respondents, one hundred fifty (36%) were first year students.

Regarding Parental educational status, 127 (30.5%) and 223 (53.5%) of fathers and mothers of the students were unable to read and write, and 179 (42.9%) and 101 (42.9%) were able to read and write; the rest 15% attended primary and secondary education. Economically, 122(29.3%) of the students have monthly family income of 50 up to 800 birr, followed by 105 (25.2%) monthly income of 801up to1000 birr.

Table 1: Socio-demographic characteristics of respondents in Bahir Dar Health Science College, Bahir Dar, June 2011

Variables **(**N= 417)	Frequency	Percent (%)
Sex		
Male	301	72.2
Female	116	27.8
Age groups(Mean, SD,21.13±1.832)		
15-19	55	13.2
20-24	339	81.3
25-29	23	5.5
Father's educational status		
Unable to read & write	127	30.5
Able to read & write	179	42.9
Primary educ (1-8)	46	11
Secondary (9-10)	20	4.8
(11-12) and above-	45	10.8
Mother's educational status		
Unable to read & write	223	53.5
Able to read & write	101	24.2
Primary educ (1-8)	41	9.8
Secondary (9-10)	21	5
(11-12) and above	31	7.4
Place of Residence		
Urban	193	46.3
Rural	224	53.7
Family Monthly Income		
50-800	122	29.3
801-1000	105	25.2
1001-2000	111	26.6
>2000	79	18.9
Year of study		
1st year	150	36
2nd year	134	32
3rd year	133	32
Field of study		
Clinical nursing	88	21
Mid-wifery	97	23.3
Laboratory	69	16.5
Pharmacy	54	13
Radiography	37	8.9
HIT	72	17.3

4.2. Knowledge on Basics of Information Technology

In general the knowledge status of respondents was assessed by analyzing response to a set of 18 questions. Continuous scores from these categories were dichotomized into “Satisfactory/Good knowledge” and “Unsatisfactory/Poor knowledge”. Respondents who Scored mean value and above were categorized as having satisfactory knowledge while Scores below mean value were considered to have unsatisfactory knowledge.

Accordingly, a total of 314 (75.3%) respondents found to be categorized as having satisfactory knowledge. Out of which 62(70.5%) Clinical Nursing, 62(86.1%) HITs, 55(79.7%) Laboratory, 61(62.9%) mid-wifery, 48(88.9%) pharmacy and 26(70.3%) were Radiography students.

When the proportion of knowledge level was assessed within the respondent’s category, the study indicated that 19.7% of Clinical Nursing and HIT, 19.4% of Mid-wifery, 17.5% of Laboratory, 15.3% of pharmacy and 8.3% of Radiography students had satisfactory knowledge on IT.

All study subjects responded to basic IT knowledge questions mainly about computer hardware, software, devices and communication tools. As indicated in table-2 out of those who responded, 314 (75.3%) know digital computer does its computation using binary systems, 206 (49%) know CPU as a hardware, 194 (46.5%) know data in the form other than database can be accessed through a network, 270 (65%) know networks allow different PCs to access the same file, 147 (35.3%) know RAM as temporary memory in the computer, 304 (73%) know modem as a device to allow computer to communicate using a telephone line, 194 (46.5%) know CD has a larger data storage capacity than floppy-disc, 297 (71%) understood that people who work at home often communicate with their office using the modem.

Table 2: Knowledge of respondents on the basics of IT, Bahir Dar Health Science College, Bahir Dar, June 2011

Variables (N=417)	Frequency	Percent (%)
Digital computer does its Computation using binary system.		
Yes	314	75.3
No	103	24.7
Digital sound and video can be communicated over a network		
Yes	277	66
No	140	34
CPU is hardware.		
Yes	206	49
No	211	51
Communication b/n PCs made by different vendor is impossible.		
Yes	132	32
No	285	68
Only data put in the form of database can be accessed using a network		
Yes	223	53.5
No	194	46.5
Email is the fastest and secured mode of mail system		
Yes	356	85
No	61	15
The floppy disc has a larger capacity than the compact disk		
Yes	223	53.5
No	194	46.5
A modem allows computers to communicate using telephone line		
Yes	304	73
No	113	27

From the total respondents 202 (48%) of them know at least one kind of secondary computer data storage devices. All study subjects were asked four multiple response questions to assess their knowledge on secondary computer data storage devices. Accordingly, 204 (49%) know about compact disk, 216 (52%) know floppy disk, 202 (48%) know flash disk (USB) and 207 (49.6%) know DVD as secondary computer data storage devices. The details of secondary data storage device responses were described under table-3.

Table 3: Knowledge of respondents on secondary computer data storage devices, Bahir Dar Health Science College, Bahir Dar, June 2011

Variables (N=417)	Frequency	Percent (%)
Which of the following is secondary data storage of a computer?		
Compact Disk		
Yes	204	49
No	213	51
Floppy Disk		
Yes	216	52
No	201	48
Flash disk (USB)		
Yes	202	48
No	215	52
DVD		
Yes	207	49.6
No	210	50.3

NB: Percentages are calculated using denominator for each group.

4.3. Access of respondents towards Information Technology

From the total respondents 176 (42.2%) had taken different level of IT training. Among those who received training majority of them (68.2%) taken (less than 6 month) short course training and only 28 (15.9%) who had taken certificate and diploma level IT training respectively. Out of the total IT trained respondents 42 (23.9%) were HIT, 33(18.8%) were MLT and 28 (15.9%) were Clinical Nursing students. When the proportion of IT training status of respondents were assessed within the category of respondents, 58.3% of HIT, 56.8% of Radiography, 47.8% of Laboratory, 44.4% of Pharmacy, 31.8% of Clinical Nursing and 28.9% of Mid-Wifery students were received training.

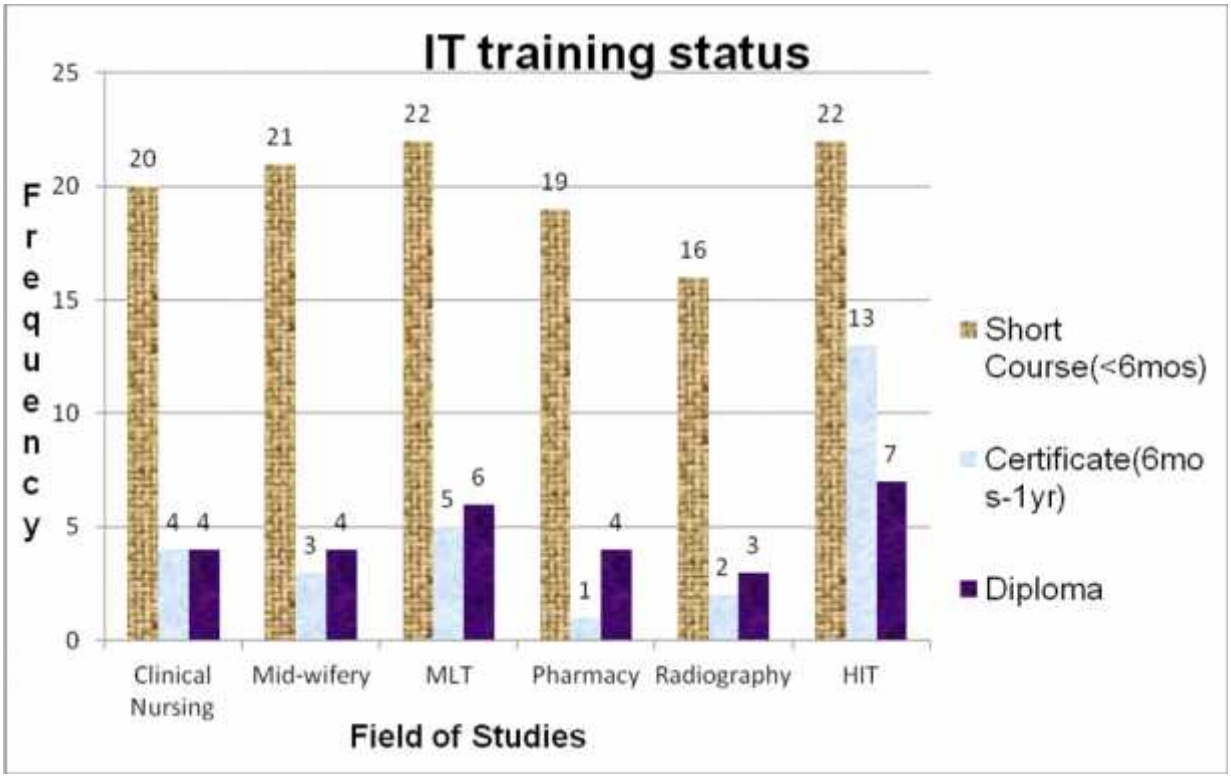

Figure-2: Distribution and type of previous IT training status among respondents of the study in Bahir Dar Health Science College, Bahir Dar, June, 2011 (Avoid Colouring)

Only twenty two (5.3%) of the total study subjects had personal computer. Out of these 9 (40.9%) HIT, 7 (31.8%) Clinical Nursing, 5 (22.7%) Laboratory had Laptop and only 1 Laboratory student had desktop.

Regarding access towards IT resources in the college, 110 (26.4%) of respondents had access. Among those who had access to IT resources in college, 32 (29%) Midwifery, 29 (26.4%) clinical Nursing, 19 (17.3%) HIT, 12 (10.9%) Radiography, 11 (10%) Laboratory, and 7 (6.4%) were Pharmacy students.

From the total study subjects 136 (33%) had access to internet for different purposes. Of which 38 (27.9%) were HIT, 37 (27%) Clinical Nursing, 24 (17.64%) Mid wifery, 15 (11%) Laboratory, 11 (8%) Pharmacy, and 11 (8%) were Radiography students. The most frequently mentioned places for Internet access were Internet café which accounts 45 (33%) followed by Campus 42 (31%) and only 25 (18%) had Internet access in their home.

Among the respondents 365 (87.5%) had taken IT course in their current study. Out of the respondents 250 (68.5%) had computer lab session during their course. With regard to adequacy of the lab session 125 (62.4%) students were unsatisfied in their computer lab session.

Three hundred thirty (85.9%) of the total study subjects thought that information technology has a role to play in the medical profession. Among the total respondents 148 (35%) completely lack confidence in using computer, 137 (33%) feel that they can cope using computer easily & only 132 (32%) feel very confident when using computer.

Table 4: Respondents' access towards IT, Bahir Dar Health Science College, Bahir Dar, June 2011

Variables	Frequency	%
IT training status (N=417)		
Yes	176	42.2
No	241	57.8
Type of training received (N=176)		
Short course (<6 month)	120	68.2
Certificate (6 month- 1 year)	28	15.9
Diploma	28	15.9
PC ownership (N=417)		
Yes	22	5.3
No	395	94.7
IT resources accessibility in your college (N=417)		
Yes	110	26.4
No	307	73.6
Internet Access (N=417)		
Yes	136	33
No	281	67
Common place for Internet access (N=136)		
Campus	42	31
Internet café	45	33
Home	25	18
Others	24	18
IT course taken in your current study (N=417)		
Yes	365	87.5
No	52	12.5
IT has a role in medical profession (N=384)		
Agree	330	85.9
Don't Agree	54	14.1

Which statement describes best the way you feel about using computer (N=417)		
Feel very confident	132	32
I feel I can cope	137	33
I lack in confidence	**148**	**35**

NB: Percentages are calculated using denominator for each group.

4.4. Information Technology Skill

4.4.1. Competence in basic application skills

The highest level of competence, reported by the study subjects were word processing 201 (48.2%), power point presentation 167 (40%) , Spread sheet Excel 141 (33.8%), Internet browsing 118 (28.3%) and email use 75 (18%) (See figure-6). For the remaining items most of them reported low levels of competence. Most of the respondents 150 (36.0%) put their competence of computer skill under basic competence with little average skills.

Out of the total respondents 156 (37.4%), 126 (30.2%) and 108 (26%) reported that they had basic competence of word processing, graphics and Power point and spread sheet (excel) skills respectively. Eighty three (20%) of the study subjects had basic skill of Internet browsing technique. Unlike office application, use of existing database and basic maintenance skill were very minimal. Among the total participants of the study only 52 (12.5%) and 43 (10.3%) of them had basic competence of using existing database and basic maintenance respectively. From the total respondents of the study none of them had a competence of database design or programming skill.

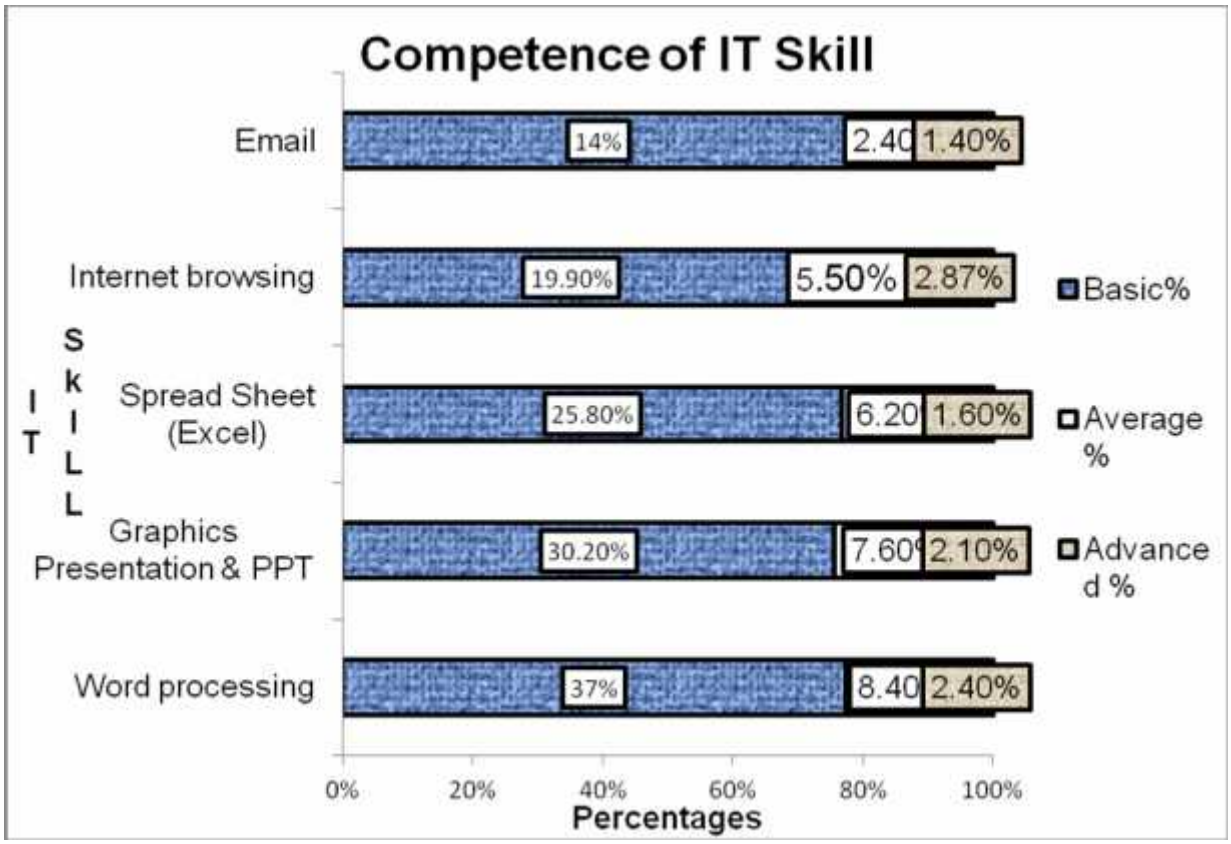

Figure-3: Competence of different IT application skills among respondents of the study in Bahir Dar Health Science College, Bahir Dar, June, 2011 (Change the graph type)

4.4.2. Common place for acquiring Information Technology skill

Majority of the respondents reported that their competences of application skills were acquired from University/College and IT training institute. From those who had word processing skill, 164 (39.3%) of them acquired it at University/College, 18 (4.3%) were acquired it in IT training institute. Similarly, from those who had competence of Internet browsing skill, 93 (22.3%) were acquired their skill at University/College and 12 (2.87%) were from IT training institute. Concerning graphics and PPT skill, 140 (33.6%) were acquired the skill at University/College and only 14 (9.6%) were from IT training institute.

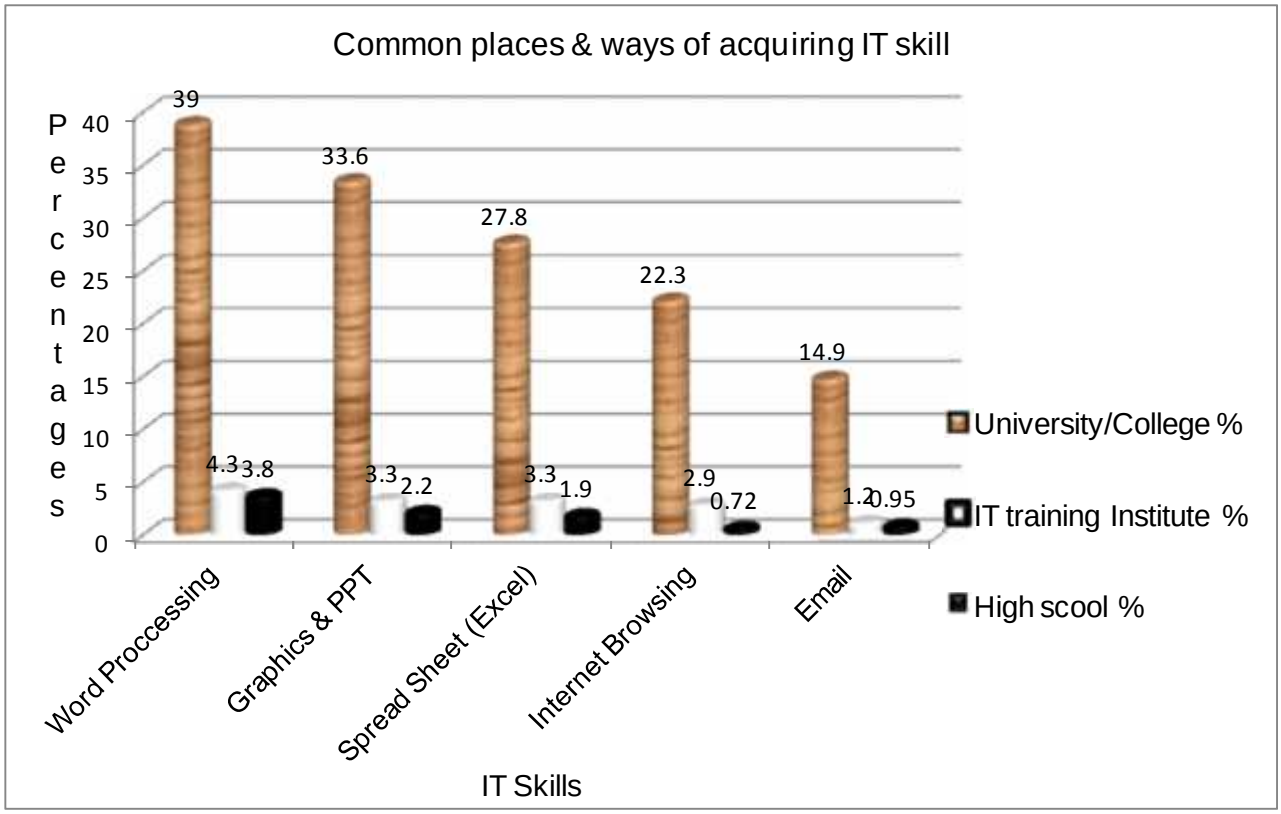

Figure-4: Common places and ways of acquiring different computer application skills among respondents of the study in Bahir Dar Health Science College, Bahir Dar, June, 2011

4.5. Utilization of Information Technology

Out of the total study subjects more than half of them 300 (72%) had ever used computer for at least once. Among these 24 (8%) used it every day, 65 (21.67%) were once in a week time, 31(10.33%) were once in two weeks time and 180 (60%) once in a month or more (See figure 5). When respondents asked the last time they used computer, 20 (6.66%) used it a day before data collection, 33 (11%) were used three days before, 63 (21%) used a week before and 184 (61.3%) used months before.

The general utilization status was assessed by analyzing responses to a set of seven questions. Continuous scores from these category were converted to ordinal ‘’Good’’ and ‘’Poor’’ utilization scale. Respondents who scored mean and above were categorized as having good utilization status while scores less than mean were considered to have poor utilization status.

Accordingly, 129 (30.9%) were scored good utilization status. Among those who scored good utilization status, 40 (31%) were HIT, 24 (18.6%) Mid-wifery and 24 (18.6%) Laboratory students. To this end, the proportion of IT utilization within the category of respondents showed that 55.6% of HIT, 22.7% of Clinical Nursing, 24.7% of Mid-wifery, 34.8% of Laboratory, 27% of Radiography and 20.4% of Pharmacy had good utilization rate.

Among the total respondents who had ever used computer, only 71 (23.67%) use Power Point application. Of which 45 (63.3%) were used only once, 17 (23.9%) were used 2-3 times only and 9 (12.67%) used more than three times. Among the total study subjects 124 (41.33%) of them were Internet users and 65 (21.67%) of respondents had email address for their mail communication. To identify the main purpose of Internet use among participants, the study subjects responded for 7 multiple response questions. Accordingly, most of them used for education 71 (57%), for email service 36 (29%), for news/film 34 (27%), for game 26 (21%) and for chatting 24 (19.3%).

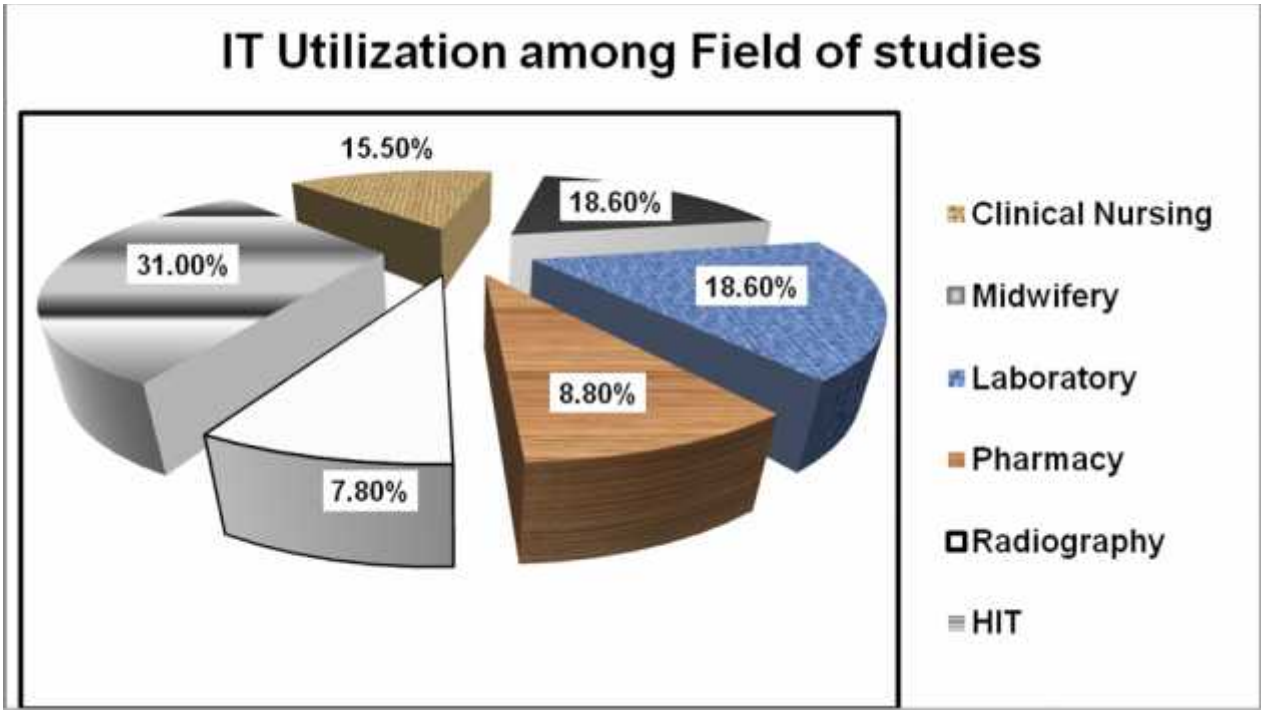

Fig.5. Pi-chart showing respondent's IT utilization among field of studies, Bahir Dar Health Science College, Bahir Dar, June 2011

Table 5: Respondents' utilization of IT, Bahir Dar Health Science College, Bahir Dar, June 2011

Variables	Frequency	Percent (%)
Ever used computer (N=417)		
Yes	**300**	**72**
No	117	28
Frequency of computer use (N=300)		
Almost every day	24	8
Once in a week	**65**	**21.67**
Once in two weeks	31	10.33
Once in a month or more	180	60
Computer used for the last time (N=300)		
Yesterday	20	6.66
3 days before	33	11
Weeks before	63	21
Months before	184	61.3
Internet Use (N=300)		
Yes	**124**	**41.33**
No	176	58.67
Have email address (N=300)		
Yes	**65**	**21.67**
No	235	78.33
Frequency of Internet use (N=124)		
Occasionally	59	47.58
Once per week	**27**	**21.78**
2-3 times per week	23	18.54
4 and more times per week	15	12.09
What do you use the Internet for (Multiple response) (N=124)		
Mail	**36**	**29**
Research/Education	**71**	**57**
News/sport/film	34	27
Chatting	24	19.3
Game	26	21
Produce Power Point presentation (N=300)		
Yes	**71**	**23.67**
No	229	76.33

NB: Percentages are calculated using denominator for each group.

4.6. Factors Associated with Information Technology Utilization

On crude bivariate analysis the factors found to be significantly associated with information technology utilization were: Mothers educational status, field of study, IT training status, current IT course taken, IT Accessibility in college, IT Skill (Table 6). The

utilization status of IT among students who took IT course currently was statistically significant before adjustment; this may be due to confounding factors.

From the variables found to be significant in the bivariate analysis only Mothers educational status (able to read and write), field of study (HIT), IT training status, IT Skill (Basic skill and Average skill) and IT Accessibility in college were found to be significantly associated with the information technology utilization in multiple logistic regression analysis.

Students whose mothers are able to read & write are 2 times (AOR=2.06, 95%CI=1.14, 3.73) more likely to utilize Information technology than those whose mother's are not.

Students who have accessibility of IT resources in college have 2 times (AOR=2.25, 95%CI= 1.32, 3.85) more likely to utilize Information Technology than those who have not.

Concerning IT training status students who took IT training previously were 2 times (AOR=2.26, 95%CI= 1.38, 3.69) more likely to utilize IT than who have not.

Regarding field of study HIT (AOR=3.24, 95%CI= 1.21, 8.67) students had 3 times more likely to utilize IT than other field of studies.

Students who had basic IT skill (AOR=3.84, 95%CI=2.20, 6.72) and average IT skill (AOR=9.13, 95%CI=3.36, 24.76) had 4 times and 9 times more likely to utilize IT than who had not respectively.

However, regarding socio-demographic characteristics like sex, age group, place of Residence, Father's educational status, Family monthly income and other variables like PC ownership, IT Knowledge, and IT course taken currently had no significance difference in IT utilization status among respondents of Health Science students.

Table 6: Multi-variate logistic regression of selected variables in relation to utilization status of IT among students in Bahir Dar Health Science College, Bahir Dar, June 2011

Variables	Utilization		Crude odds ratio (95%CI)	Adjusted odds ratio (95%CI)
	Yes	No		
Sex				
Male	93	208	0.99(0.63,1.58)	1.20(0.66,2.20)
Female	36	80	1*	
Age groups				
15-19	13	42	0.58(0.20,1.67)	0.49(0.14,1.70)
20-24	108	231	0.87(0.36,2.13)	1.15(0.41,3.25)
25-29	8	15	1*	
Field of study				
Clinical nursing	20	68	0.79(0.33,1.91)	1.43(0.53,3.88)
Mid-wifery	24	73	0.88(0.37,2.09)	2.28(0.83,6.29)
Laboratory	24	45	1.44(0.59,3.46)	2.42(0.88,6.67)
Pharmacy	11	43	0.69(0.25,1.84)	1.21(0.40,3.61)
HIT	40	32	**3.38(1.43,7.98) ** **	**3.24(1.21,8.67) ** **
Radiography	10	27	1*	
Place of Residence				
Urban	63	130	1.16(0.76,1.76)	0.83(0.48,1.42)
Rural	66	158	1*	
Monthly Family income				
50-800	33	89	1*	
801-1000	33	72	1.24 (0.69,2.19)	0.95(0.46,1.93)
1001-2000	36	75	1.29(0.74,2.27)	1.35(0.67,2.72)
>2000	27	52	1.40(0.76,2.58)	1.30(0.60, 2.82)
Father educational status				
Unable to read & write	36	91	1*	
Able to read & write	56	123	1.15(0.69,1.89)	1.08(0.55,2.09)
Primary educ (1-8)	15	31	1.22(0.59,2.53)	0.99(0.38,2.58)
Secondary (9-10)	5	15	0.84(0.28,2.48)	0.62(0.14,2.79)
(11-12) and above-	17	28	1.53(0.75,3.14)	1.33(0.40,4.42)
Mother educational status				
Unable to read & write	60	163	1*	
Able to read & write	40	61	**1.78(1.08,2.93) ** **	**2.06(1.14,3.73) ** **
Primary educ (1-8)	13	28	1.26(0.61,2.59)	1.32(0.57,3.04)
Secondary (9-10)	7	14	1.36(0.52,3.53)	1.23(0.39,3.78)
(11-12) and above-	9	22	1.11(0.48,2.55)	1.24(0.48,3.23)
IT Accessibility in college				
Yes	50	60	**2.40(1.53,3.79) ** **	**2.25(1.32,3.85) ** **
No	79	228	1*	
IT training status				
Yes	76	100	**2.69(1.76,4.13) ** **	**2.26(1.38,3.69) ** **
No	53	188	1*	

PC Ownership				
Yes	10	12	1.93(0.81,4.59)	1.17(0.41,3.36)
No	119	276	1*****	
Current IT course taken				
Yes	121	244	**2.73(1.24,5.97) ****	2.09(0.89,4.93)
No	8	44	1*****	
IT Knowledge Status				
Satisfactory	105	209	1.65(0.99,2.76)	1.24(0.68,2.24)
Unsatisfactory	24	79	1*****	
IT Skill				
None	38	197	1*****	
Basic	69	81	**4.42(2.75,7.08) ****	**3.84(2.20,6.72) ****
Average	20	8	**12.9(5.32,31.57) ****	**9.13(3.36, 24.76) ****
Advanced	2	2	5.18(0.71,37.9)	2.39(0.26, 21.59)

*****Reference category, ****** significant association

- Back ward stepwise multiple logistic regression was used to assess the independent effect of explanatory variables.

5. DISCUSSION

This institution – based study has attempted to identify the magnitude of information technology knowledge and utilization and associated factors among students of Bahir Dar Health Science College, in Bahir Dar city, North West Ethiopia.

The study results showed that 75.3% of the respondents had satisfactory knowledge of Information Technology. This finding is in agreement with the finding from study done in Nigeria teaching hospital, where 76.7% of medical students had satisfactory knowledge of Information Technology (13). However, this figure is greater than the data obtained from the ICT penetration survey among health care providers in Addis Ababa and four towns of regions in 2002 which was about 39% and a study conducted in Zaria, Nigeria was also less than this finding 50.6% of clinical year medical students, 52% in Tanzania MUCHS had satisfactory knowledge of IT (5, 11, 7).

This might be due to the time gap; those studies were reported more than 5 years ago. Over the past decade, there has been a marked increase in the availability of IT resources, currently respondents take the IT course starting from 1st year up to 3rd year of studies, also there is improvement in accessing and in utilization of the service, these provides greater opportunity for today's health science students to acquire computer related knowledge.

IT utilization status of respondents was (30.9%). Also out of respondents who have good utilization status only (8%) used computer every day. This finding was similar with ICT penetration survey report among health care provider's in Addis Ababa and four towns of regions in 2002 which was about 33% (11)**.**

But lower than study done in Ile-Ife, Nigeria teaching hospital shown 40% of the medical students had good IT utilization and 43% among clinical and Nursing students of Ibadan, university college of Nigeria (13, 4). This might be due to limited access to IT resources in college, the IT course given might not be practically satisfactory because students were not satisfied with computer laboratory sessions in terms of the number of computers available, allocated time for exercise and help from the laboratory assistant.

Regarding access towards IT resources in the college, 26.4% of respondents had access in health Science College. Only 33% of respondents had internet access. Out of these, the most frequently mentioned places for Internet access were Internet café which contains 33% followed by Campus 31%. This finding is much lower than study done in Greece where 44.2% of Nursing students had IT resources accessibility in their institution (22).

In this study it is indicated that students who have accessibility of IT resources in the college have 2 times (AOR=2.25, 95%CI= 1.32, 3.85) more likely to utilize Information Technology than who have not. This finding was supported by study from Malaysia where increasing access to IT resources will increase medical students Information technology utilization (26).

The study also revealed that mother's educational status (AOR=2.06, 95%CI=1.14, 3.73) have significant association with students IT utilization. From the total respondents 42.2% had taken different level of IT training. Among those who received IT training, majority of them 68.2% had taken short course training (less than 6 month). This finding was lower than study done in Nigeria teaching hospital, which was 53.7%, received training and 26.6 % of them received short course training (13). This may be due to difference in socio economic status of the two countries, in access to get IT resources and lack of quality training.

In this study previous IT training status of students who took IT training were 2 times (AOR=2.26, 95%CI= 1.38, 3.69) more likely to utilize IT than who have not. In this study it is indicated that field of study HIT (AOR=3.24, 95%CI= 1.21, 8.67) students had 3 times more likely to utilize IT than other field of studies. This may be first, HIT department is directly related with Information technology and HIT students had better access to IT resources and this may give them better advantage of IT utilization.

The current study shown that students who had basic IT skill (AOR=3.84, 95%CI=2.20, 6.72) and average IT skill (AOR=9.13, 95%CI=3.36, 24.76) had 4 times and 9 times more likely to utilize IT than who had not respectively. This finding supported by a study conducted in Helsinki, Finland demonstrated that basic IT skill was highly associated with utilization of IT facilities (27). The current study shown that, IT skill had significant

association with IT utilization, but (56%) more than half of the respondents don't have IT skill.

6. STRENGTHS AND LIMITATIONS OF THE STUDY

Strengths

- Since it is one of the few studies in this area it provides baseline information for those interested.

Limitations

The limitation of this study includes:

- Lack of similar studies in Ethiopia to make comparative discussion.

7. CONCLUSION AND RECOMMENDATIONS

CONCLUSION

This study shows that, 75% of the respondents had satisfactory knowledge of Information Technology. The magnitude of utilization of information technology among students of Bahir Dar Health Science College was low. More than half of the health science students who received the IT course were not satisfied with the course and uncomfortable with their computer lab sessions. Among the variables mother's educational status, field of study, IT training status, IT skill and IT accessibility in college were found to be significantly associated with the information technology utilization. However, more than half of the respondents didn't have IT skill and also accessibility of IT resources in the college was very limited.

RECOMMENDATION

Based on the findings of the study, the following recommendations are forwarded:

To FMOH and ARHB

- Resources have to be allocated from the government to better develop the IT infrastructure in the health science colleges.
- The existing IT course in the curriculum have to be strengthened interms of content, credit hour, mode of delivery and computer lab sessions to make it more skill oriented.
- The current IT knowledge and utilization of health science students have to be revisited in terms of the new HMIS initiative requirements in order to create better balance in the long run.

To BHSC

- Have to provide easier and equitable access to IT resources for all fields of studies, especially in libraries, in order to encourage students to use computer applications for academic purposes.
- Have to give emphasis on improving IT skills of students during their stay in the health science college.

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9. ANNEXES

Annex I: English questionnaire

University of Gondar College of Medicine and Health Sciences

School of Public Health

Questionnaires to assess knowledge and utilization of information technology and associated factors among Bahir Dar Health Science College students

I am Tewodros Demeke, a student of University of Gondar in post-graduate programme of MPH-HI. Currently I am doing a Masters thesis entitled as Assessment of Knowledge and Utilization of Information Technology and associated factors among Bahir Dar Health Science College students**.**

The objective of this self administered questionnaire is to collect data from health science students on their knowledge and utilization of Information Technology during their stay in the college. In line with this, it helps to obtain data on the means of acquiring IT knowledge, utilization and associated factors. It will take about 10-20 minutes to fill the questioner. You are selected to participate in this study just by chance. The information you provide us is extremely important and invaluable, as it will help the governmental and private institutions involved in training of health science students to give base line information about the current Utilization status of students and to plan appropriate measures in improving the student's performance.

I would like to assure you; the information that you provide me is completely confidential and will be used only for the research purpose. You have a full right to refuse to take part or to stop filling the questioner at any time. But the information that you will provide is quite useful to achieve the objective of the study.

Considering the information you get from the general information above, your role in the success of the research is important and I appreciate your contribution to the research. Would this be okay with you?

I understood about the advantage of the research and the roles I will have in the research. I have agreed to participate in the research.

A. Yes B. No

Date of data collection----------
Name of data collector---------- signature---------- Name of supervisor---------- signature----------

PART I – Demographic characteristics

Instruction: In this section please encircle the number in front of the choices that exactly fits your status out of the list.

Quest No	Questions	Response	Code	Skip
101	Age	____years(age in completed years)		
102	Sex	Male Female	1 2	
103	place of residence	Urban Rural	1 2	
104	year of study	_____(write in years)		
105	field of study	_____(write the name of your department)		
106	What is your father's educational status?	Illiterate Read and write Primary education (1-8) Secondary (9-10) (11-12) and above	1 2 3 4 5	
107	What is your mother's educational status?	Illiterate Read and write Primary education (1-8) Secondary (9-10) (11-12) and above	1 2 3 4 5	
108	How much is your family monthly income?	_____in birr		

PART II: Knowledge

Instruction: For the True/False questions please encircle 1 if you think the statement is true or encircles 2 if the statement is false. For others, follow the instruction just below the question.

Quest No	Questions	Response	Code	Skip
201	Which of the following are secondary computer data storage tools? (Encircle as much as you know)	Compact Disk Floppy Disk Mouse Flash Disk (USB) Key board Monitor Server DVD RAM	1 2 3 4 5 6 7 8 9	
202	A digital Computer does its computation using binary systems (0 and 1).	True False	1 2	
203	A Compact Disk (CD) is hardware.	True False	1 2	
204	The CPU is hardware.	True False	1 2	
205	Communications between PCs Made by different Vendors is impossible.	True False	1 2	
206	Only data put in the data base form can be accessed using a network.	True False	1 2	
207	Digital sound and video can be communicated over a network.	True False	1 2	
208	According to coverage a computer network can be Local Area Network (LAN), Metropolitan Area Network (MAN), and Wide Area Network (WAN).	True False	1 2	

209	Networks allow different Personal Computers (PCs) to access the same files.	True False	1 2	
210	The global Network of Networks is called the Internet.	True False	1 2	
211	E-mail is the fastest and secured mode of mail communication.	True False	1 2	
212	An organization can have an Intranet mail system.	True False	1 2	
213	WWW stands for World Wide Web.	True False	1 2	
214	A floppy Disk has a larger capacity than the Compact Disk.	True False	1 2	
215	RAM is a permanent memory in the computer.	True False	1 2	
216	A modem allows computers to communicate using telephone line.	True False	1 2	
217	People who work at home can communicate with their office using the modem for their Internet connection.	True False	1 2	
218	Please select terminologies that you confidently know their meanings from the list (encircle as much as you know their meaning)	Icon Hyper text link Button Dial up connectivity Online communication Hardware Tool bar Internet account URL Website System unit Browser Folder Menu Search engine Software Computer viruses	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	

		Operating system Windows environment Formatting disks	18 19 20 21	

PART III- Access towards IT
Instruction: Please encircle the answer from the list under the categories that best describes the question.

Quest No	**Questions**	**Response**	**Code**	**Skip**
301	Have you had any formal training in Information Technology?	Yes No	1 2	if NO skip to 303
302	If yes, indicate which category of training you took?	(< 6 months) Short course (6month – 1 Year) Certificate Diploma Degree	1 2 3 4	
303	Do you have a personal computer?	Yes No	1 2	if NO skip to 305
304	If yes, which type?	Desktop Laptop Palm top PDA	1 2 3 4	
305	Do you have access to IT resources like computer, internet and electronic documents (i.e. in a form of CD-ROM on your field of specialty) in your college? (This may be in the library or computer lab)	Yes No	1 2	
306	Do you have Internet access?	Yes No	1 2	if NO skip to 308
307	If yes, where do you access more commonly?	Home Computer laboratory Internet Café Other specify	1 2 3 99	

308	Have you taken an IT course in your current study?	Yes No	1 2	If NO skip to 312
309	If yes, in which year of education? (Write simply year of the course delivered)	----------th year of study		
310	Do you have a computer lab session during your computer course?	Yes No	1 2	if NO skip to 312
311	If yes, are you satisfied with the practical session in terms of the number of computers, time for exercise and help from the lab assistant?	Yes No Not sure	1 2 3	
312	Do you think information technology has a role in your profession?	Yes No Not sure	1 2 3	
313	What information/Knowledge resources do you use for reference in your studies? (Choose all that can apply to you)	Text books Photocopies of textbooks Lecture notes made by self Lecture notes made by instructor Videos Electronic text books Journals Online journals (Others) specify	1 2 3 4 5 6 7 8 99	
314	Have you ever used a computer assisted learning package? (Hint: learning packages through CDROM, Online Education, Video conferencing, etc...) (Please choose as appropriate)	Yes, in high school Yes, at home Yes, in college I have never used a computer assisted learning package I have never heard this term before	1 2 3 4 5	
315	Which of these statements best describes the way you feel about computer?	I feel very confident using computer I feel I can cope I am completely lacking in confidence	1 2 3	

PART IV: Skill and Utilization

1) Assessment of your IT Skills. (Please complete the table below by putting "X" sign in the appropriate boxes)

Quest No	Questions skills	Your competence of computer skill (Tick one box for each skill)				If your response for the competence is Basic/Average/ Advanced. Please, tick where do you acquire the skill.			
		None (1)	Basic (2)	Average (3)	Advan Ced (4)	High School (1)	University/ College (2)	IT training Institute(3)	Self /Home(4)
401	Using Microsoft word application								
402	Spreadsheets (Excel)								
403	Graphics(like Microsoft picture) Presentation(like PowerPoint)								
404	Internet-World wide Web								
405	E-mail								
406	Databases use(an existing data base)								
407	Conducting basic maintenance (like formatting, install software)								
408	Databases design (set up a database)								
409	Programming								

NB: **None:** If you never operate the application program like Micro soft Office (Word, Excel, PPT etc...).

Basic skill: If respondents able to open the program and able to do some of the MS office program of the specified computer applications.

Average skill: If respondents having the basic and developed additional skills including the use of different software programs and able to operate the specified computer application regularly for office or academic purpose.

Advanced skill: If Respondents knowledgeable of hardware and software and able to operate the specified computer application beyond the routine office application like troubleshoot, advise and teach others.

2) Utilization of the available IT infrastructure

Instruction: Please select from the list and encircle the corresponding number according to the instruction under each question.

Quest No	Questions	Response	Code	Skip
410	Have you ever used a computer? (If yes, how often) (Choose one only)	Yes, Almost every day Yes, Once a week Yes, once in two weeks Yes, once in a month or more Never used a computer	1 2 3 4 5	if never used skip to 501
411	When did you use a computer for the first time? (Please answer in either month or years)	_____months ago or _____years ago		
412	When have you used computer last time?	Yesterday 3 days before A week before A month before	1 2 3 4	
413	Have you used a computer as part of a course at school or college?	Yes No	1 2	
414	Do you have an email address?	Yes No	1 2	
415	Do you use the Internet?	Yes No	1 2	if NO skip to 419
416	If yes, where do you use the Internet more commonly?	Home College Internet Café _____Other specify	1 2 3 99	

417	What do you use the Internet for?	Mail Research/Education Film/News Forum online File transfer Chatting Game _____Others (mention)	1 2 3 4 5 6 7 99	
418	How often do you use the Internet?	Occasionally Once per week 2-3 times per week 4 and more times per week	1 2 3 4	
419	Have you ever produced a presentation using power point tools yourself?	Yes No	1 2	if NO skip to 501
420	If yes, how many times have you produced a presentation?	Once 2- 3 times More than three times	1 2 3	

Thank you for your patience to complete this questionnaire!!!

ጎንደር ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና ትምህርት ክፍል
አማርኛ ቃለ መጠይቅ

የኢንፎርሜሽን ቴክኖሎጂ ዉቀት ፣አጠቃቀም ና ተያያዥነት ያላቸዉ ሁኔ ዎች በባህር ዳር ጤና ሳይንስ ኮሌጅ ተማሪዎች ላይ አሰመልክቶ ምርምና ጥናት ለማድረግ የሚግዝ በአማርኛ የተዘጋ ቃለ መጠይቅ ነው።

ሰላም !ጤና ይስጥልኝ!

ስሜ ---------- ይባላል። ይህ ጥናት በጎንደር ዩኒቨርሲቲ የህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ትምህርት ቤት የመጨረሻ ዓመት ተማሪ በሆኑት በአቶ ቴዎድሮስ ደመቀ የሚካሄድ ሲሆን የጥናቱ ዓላማም የኢንፎርሜሽን ቴክኖሎጂ ውቀት፤ አጠቃቀምና ተያያዥነት ያላቸው ሁኔ ዎች በባህር ዳር ጤና ሳይንስ ኮሌጅ ወስጥ በሚገኙ ተማሪዎች ላይ ይካሄዳል።

ጥናቱ በቀጥ የሚመለከተው በባህር ዳር ጤና ሳይንስ ኮሌጅ ወስጥ በሚገኙ ተማሪዎች ላይ ስለሆነ ርስዎ በአጋጣሚ ለጥናቱ ከተመረጡ ተሳ ፊዎች መካከል አንዱ ሲሆኑ በጥናቱ ንዲሳተፉ በአክብሮት ጋብዘንዎ ል። የሚሰጡንን መረጃ ሙሉ በሙሉ በሚስጥር ንደምንይዝ ላረጋግጥልዎ ፈልጋለሁ።

ስምዎን አንጽፍም የሚነግሩንን ማንኛውንም ነገር ሚስጥራዊነቱ የተጠበቀ ንደሚሆን ደግሜ አረጋግጥልዎ ለሁ። ተሳትፎዎ በፈቃደኝነት ላይ የተመሰረተ ነው። ማንኛውንም መመለስ የማይፈልጉትን ጥያቄ ንዲመልሱ አይገደዱም። ሌላው ልንገልጽልዎት የምንፈልገው ነገር ርስዎ የሚሰጡን መረጃ ለጥናቱ መሳካት ብቻ ሳይሆን የጤና ሳይንስ ተማዎችን በማሰልጠን ላይ ላሉ የመንግስትና የግል ተቋማት የተማሪዎችን የኢንፎርሜሽን ቴክኖሎጂ ውቀት ና የአጠቃቀም ሁኔ ና ተያያዥ ሁኔ ዎች ለማወቅ ና በዚህም መሰረት አስፈላጊውን የፖሊሲ ማሻሻያ ና ቅድ ለማውጣት ይረዳል። ጥያቄው ከ10 - 20 ደቂቃ ይወስዳል። ጥያቄ አለዎት?

የዚህ ጥናት ዓላማ ተነቦልኝ (አንብቤው) ና ዓላማው ገበቶኝ በጥናቱ ለመሳተፍ፤

ሀ. ፍቃደኛ ሆኛለሁ ለ. ፍቃደኛ አይደለሁም

መጠይቁ የተደረገበት ቀን----------

የመጠይቁ ሰብሳቢ ሙሉ ስም ---------- ፊርማ ----------

መጠይቁን ያየውና ያረጋጠው ተቆጣጣዊ ስም ---------- ፊርማ ----------

ክፍል አንድ፡ አጠቃላይ ማህበራዊ ነክ መረጃዎች

ተ.ቁ	ጥያቄ	ምላሽ	ኮድ	ወደ ጥያቄ ቁጥር--ይለፉ
101	ድሜ	------- ዓመት		
102	ጾ	ወንድ ሴት	1 2	
103	የመኖሪያ ቦ	ከተማ ገጠር	1 2	
104	የትምህርት ደረጃ	------- (በዓመት)		
105	የትምህርት ክፍል	----------		
106	የአባት የትምህርት ደረጃ	ያልተማረ ማንበብ፤ መጻፍ የመጀመሪያ ደረጃ (ከ1-8) ሁለተኛ ደረጃ (ከ9-10) ኮሌጅ ከዛ በላይ	1 2 3 4 5	
107	የ ናት የትምህርት ደረጃ	ያልተማረ ማንበብ፤ መጻፍ የመጀመሪያ ደረጃ (ከ1-8) ሁለተኛ ደረጃ (ከ9-10) ኮሌጅ ከዛ በላይ	1 2 3 4 5	
108	የቤተሰብ ወርሃዊ ገቢ ምን ያህል ነው?	----------(በብር ይግለጹ)		

ክፍል ሁለት ፡ የ ውቀት ጥያቄዎች

መመሪያ፡- ለሚከተሉት ውነት /ሐሰት ጥያቄዎች ውነት ከሆነ 1ን ሐሰት ከሆነ 2ን አክብቡ፡፡ ለሌሎች ጥያቄዎች በመመሪያው መሰረት መልስ ስጡ፡፡

ተ.ቁ	ጥያቄ	ምላሽ	ኮድ	ወደ ጥያቄ ቁጥር--- ይለፉ
201	ከሚከተሉት ውስጥ ሁለተኛ ደረጃ የኮምፒውተር ዳ ማከማቻ የትኛው ነው?	ኮምፓክት ዲስክ ፎሎፒ ዲስክ ማውዝ ፍላሽ ዲስክ ኪቦርድ ሞኒተር ሰርቨር ዲቪዲ ራም	1 2 3 4 5 6 7 8 9	
202	ዲጅ ል ኮምፒውተር ስራውን የሚሰራው 0 ና 1 በመጠቀም ነው	ውነት ሐሰት	1 2	
203	ኮምፓክት ዲስክ (ሲዲ) የሃርድዌር ክፍል ነው	ውነት ሐሰት	1 2	
204	ሲፒዩ የሀርድዌር ክፍል ነው	ውነት ሐሰት	1 2	
205	በኮምፒውተሮች መካከል የሚደረግን ግንኙነት በተለያዩ መሥመሮች ማድረግ አይቻልም	ውነት ሐሰት	1 2	
206	በዳ ቤዝ የተቀመጠን ዳ ወይም መረጃ በኔትወርክ ማግኘት ንችላለን	ውነት ሐሰት	1 2	
207	ዲጅ ል ድምጽንና ቪዲዮን በመጠቀም በኔት ወርክ ግንኙ ነት መፍጠር ይቻላል	ውነት ሐሰት	1 2	
208	በሽፋን ደረጃ የኮምፒውተር ኔትወርክ ሎካል ኤሪያ ኔትወርክ ፤ ሜትሮፖሊቲያን ኤሪያ ኔትወርክ ና ዋይድ ኤሪያ ኔትወርክ በመባል ይከፋፈላል	ውነት ሐሰት	1 2	
209	ኔትወርክ አንድ ዓይነት ፋይሎችን በተለያዩ ኮምፒውተሮች ንድናገኝ ይረዳናል፡፡	ውነት ሐሰት	1 2	
210	የዓለም አቀፍ ኔትወርኮች ስብስብ ኢንተርኔት ይባላል	ውነት ሐሰት	1 2	
211	ኢሜይል ፈጣንና ሚስጥራዊነቱ የተጠበቀ የግንኝ ነት መንገድ ነው	ውነት ሐሰት	1 2	
212	አንድ ድርጅት ኢንትራኔት ሊኖረው ይችላል	ውነት ሐሰት	1 2	
213	www ለወርልድ ዋይድ ዌብ ምህጻረ ቃል ነው	ውነት ሐሰት	1 2	
214	ፍሎፒ ዲስክ ከኮምፓክት ዲስክ የበለጠ የመያዝ አቅም አለው	ውነት ሐሰት	1 2	

215	ራም የኮምፒውተር ቋሚ ሚሞሪ ነው	ውነት ሐሰት	1 2	
216	ሞደም የስልክ ገመድን በመጠቀም በኮምፒውተሮች መካከል ግንኙነት ንዲኖር ያደርጋል	ውነት ሐሰት	1 2	
217	በቤ ቸው ኢንተርኔት የሚጠቀሙ ሰዎች የቢሮአቸውን ሞደም በመጠቀም ኢንተርኔት ማግኘት ይችላሉ	ውነት ሐሰት	1 2	
218	ከሚከተሉት መካከል ትርማቸውን በ ርግጠኝነት የም ወቅቋቸውን አክብቡ (ከአንድ በላይ መልስ)	አይከን ሀይፐር ቴክስት ሊንክ በተን ዲያል አፕ ኮኔክቲቪቲ ኦንላይን ኮሚኒኬሽን ሃርድዌር ቱልባር ኢንትርኔት አካውንት ዩአርኤል ዌብሳይት ሲስተም ዩኒት ብራውዘር ፎልደር ሜኑ ሰርች ኢንጅን ሶፍት ዌር ኮምፒውተር ቫይረስ ኦፕሬቲንግ ሲስተም ዊንዶውስ ኢንቫይሮሜንት ፎርማቲንግ ዲስክ	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	

ክፍል ሶስት፡ ለኢንፎርሜሽን ቴክኖሎጂ ያለ ቀረቤ

ተ.ቁ	ጥያቄ	ምላሽ	ኮድ	ወደ ጥያቄ ቁጥር--- ይለፉ
301	ከዚህ በፊት የኢንፎርሜሽን ቴክኖሎጂ ስልጠና ወስደው ያውቃሉ?	አዎ አላውቅም	1 2	መልስዎ 2 ከሆነ ወደ ተራ ቁጥር 303 ይለፉ
302	መልስዎ አዎ ከሆነ የወሰዱት ስልጠና የምን ያህል ጊዜ ነው?	(<6 ወር) አጭር ስልጠና (ከ6 ወር-1ዓመት) ሰርተፍኬት ዲፕሎማ ዲግሪ	1 2 3 4	
303	የግል ኮምፒውተር አለዎት?	አለኝ የለኝም	1 2	መልስዎ 2 ከሆነ ወደ 305 ይለፉ
304	መልስዎ አለኝ ከሆነ ምን ዓይነት?	ዴስክ ቶፕ ላፕ ቶፕ ፓልም ቶፕ ፒዲኤ	1 2 3 4	
305	የኢንፎርሜሽን ቴክኖሎጅ ማለትም ኮምፒውተር፤ ኢንተርኔት ና የኤሌክትሮኒክስ መርጃ (ሲዲ ሮም በትምህርት ክፍልዎ ላይ የተመረኮዘ) በላይብረሪ ወይም	አዎ አይገኝም	1 2	

	በኮምፒውተር ላቦራቶሪ አቅርቦት በኮሌጅ ያገኛሉ?			
306	የኢንተርኔት አገልግሎት አቅርቦት ያገኛሉ?	አዎ አላገኝም	1 2	መልስዎ ሁለት ከሆነ ወደ 309 ይለፉ
307	መልስዎ አዎ ከሆነ ብዙ ጊዜ አቅርቦት የት ያገኛሉ?	ቤት ኮምፒውተር ላቦራቶሪ ኢንተርኔት ካፌ ------ ሌላ ካለ ይጠቀስ	1 2 3 4	
308	በአሁኑ የትምህርት ክፍልዎ የኢንፎርሜሽን ቴክኖሎጂ ኮርስ ወስደዋል?	አዎ አልወሰድኩም	1 2	መልሱ 2 ከሆነ ወደ 313 ጥያቄ ይለፉ
309	መልስዎ አዎ ከሆነ በየትኛው የትምህርት ዓመት? (ኮርስ የተወሰደበት ዓመት ይጻፍ)	-----ኛ ዓመት		
310	በወሰዱት የኢንፎርሜሽን ቴክኖሎጂ ኮርስ ላይ የኮምፒውተር ላቦራቶሪ ፕሮግራም አለ?	አዎ የለም	1 2	መልስዎ 2 ከሆነ ወደ 313 ጥያቄ ይለፉ
311	መልስዎ አዎ ከሆነ የተግባር ልምምዱ ባሉት የኮምፒውተር ቁጥር በተመደበው ፤ የልምምድ ጊዜ ና ላቦራቶሪ ክፍል ረዳት ከሚሰጠው ገዛ አንጻር በቂ ነው ብለው ያምናሉ?	አዎ በቂ አይደለም ርግጠኛ አይደለሁም	1 2 3	
312	የኢንፎርሜሽን ቴክኖሎጂ በ ርስዎ ሙያ ሚና አለው ብላው ያስባሉ?	አዎ የለውም ርግጠኛ አይደለሁም	1 2 3	
313	ለማጣቀሻ /ለማመሳከሪያ ምን ዓይነት የኢንፎርሜሽን /የ ውቀት ምንጮችን በትምህርትዎ ይጠቀማሉ? (ከአንድ በላይ መልስ)	መማሪያ መፅሀፍት የመማሪያ መፅሀፍት ኮፒ በራስ የተዘጋጀ ሌክቸር ኖት በመምህር የተዘጋጀ ሌክቸር ኖት ቪዲዮ የኤሌክተሮኒክስ መማሪያ መፅሀፍት ጆርናል አንላይን ጆርናል ሌላ ካለ ይጠቀስ----------	1 2 3 4 5 6 7 8 99	
314	በኮምፒውተር የ ገዘ የመማሪያ ፓኬጅ ተጠቅመው /ተምረው ያውቃሉ? (ፍንጭ ፡ ቪዲዮ ኮንፈረንሲንግ፤ አንላይን ትምህርት . . .) (ከአንድ በላይ መልስ)	አዎ በ2ኛ ደረጃ ትምህርት አዎ በኮሌጅ አዎ በቤት ተጠቅሜ አላውቅም ከዚህ በፊት ቃን ሰምቼ አላውቅም	1 2 3 4 5	
315	ከሚከተሉት ስለ ኮምፒውተር ያለዎትን አመለካከት በበቂ ሁኔ የሚገልፀው የትኛው ነው?	በሙሉ ልቤ ኮምፒውተር መጠቀም ንደምችል ይሰማኛል ንደምሞከር ይሰማኛል ሙሉ በሙሉ ልበ ሙሉነት ይጎድለኛል	1 2 3	

ክፍል አራት፡ የኢንፎርሜሽን ቴክኖሎጂ ክህሎትና አጠቃቀም

1. ክህሎት (በተዘጋጀው ሳጥን ላይ የ«✓» ምልክት በማድረግ ክፍት ቦ ውን ይሙሉ፡፡

ተ.ቁ	የክህሎት ጥያቄ	ያለዎት የኮምፒውተር የክህሎት ብቃት (አንድ ሳጥን ላይ ብቻ ምልክት ያድርጉ)				ለብቃት ጥያቄዎች የተመለሰው መልስ 2፤ 3፤4 ከሆነ ችሎ ዎን ከየት አገኙ			
		የለኝም (1)	መሰረ ዊ (2)	መካከለ ኛ (3)	ላቅ ያለ ችሎ (4)	2ኛ ደረጃ ት/ቤት (1)	ዩኒቨርሲ ቲ (ኮሌጅ) (2)	ኢንፎርሜሽ ን ቴክኖሎጂ ማሰልጠኛ ተቋም (3)	በግል (ቤት) (4)
401	ማይክሮሶፍት ወርድ መጠቀም								
402	ስፕሪድ ሽት (ኤክሴል)								
403	ግራፊክስ (ማይክሮሶፍት ፒክቸር) በፓዎር ፖይንት ማቅረብ								
404	ኢንተርኔት ዎርልድ ዋይድ ዌብ								
405	ኢሜል								
406	ዳ ቤዝ መጠቀም (የተዘጋጀን ዳ ቤዝ)								
407	መሰረ ዊ ጥገና ማካሄድ (ሶፍት ዎር መጫን፤ ፎረማቲንግ)								
408	ዳ ቤዝ መቅረጽ (ዲዛይን ማድረግ)								
409	ፕሮግራሚንግ								

ማሰ ወሻ፡- የለኝም፡- ከዚህ በፊት የትኘውምኝ አፕሊኬሽን ፕሮግራም ለምሳሌ ማይክሮሶፍት ኦፊስ (ወርድ፤ ኤክሴል፤ ፖወር ፖይንት የመሳሰሉትን) ተጠቅሞ የማያውቅ ማለት ነው፡፡

መሰረ ዊ ክህሎት፡- ተጠቃሚው የተወሰኑ ማይክሮሶፍት ኦፊስ ኮምፒውተር አፕሊኬሽኖችን መክፈትና መጠቀም ከቻለ ማለት ነው፡፡

መካከለኛ፡- ተጠቃሚው ከመሰረ ዊ ከህሎት በተጨማሪ ተጫማሪ ክህሎት ማለትም የተለያዩ የሶፍትዌር ፕሮግራሞችን መጠቀም ከቻለና ነዚህ ፕሮግራሞች ለቢሮ ወይም ለትምህርት አገልግሎት አዘውትሮ የሚጠቀም ከሆነ ማለት ነው ፡፡

ላቅ ያለ ችሎ ፡- ተጠቃሚው የሃርድ ዌርና የሶፍት ዌር ውቀት ኖሮት ከመደበኛ ኦፊስ አፕሊኬሽኖች በተጨማሪ ትራቭልሹትን የመሳሰሉ ፕሮግራሞችን መስራት የሚችል ሌሎችን ማማከርና ማስተማር የሚችል ማለት ነው፡፡

2. አጠቃቀም

መመሪያ:- በጥያቄው መሰረት ቁጥሩን በመመምረጥ ያክብቡ::

ተ.ቁ	ጥያቄ	ምላሽ	ኮድ	ወደ ጥያቄ ቁጥር--- ይለፉ
410	ኮምፒውተር ተጠቅመው ያውቃሉ? (መልስዎ አዎ ከሆነ ምን ያህል ጊዜ) (አንድ መልስ)	አዎ በቀን በቀን አዎ በሳምንት አንድ ጊዜ አዎ በሁለት ሳምንት አንድ ጊዜ አዎ በወር ወይም ከዚያ በላይ አንድ ጊዜ በፍፁም ተጠቅሜ አላውቅም	1 2 3 4 5	መልስዎ 5 ከሆነ ወደ ተራ ቁጥር 501 ይለፉ
411	ኮምፒውተር ለመጀመሪያ ጊዜ የተጠቀሙት መቼ ነበር? (በወር ወይም በዓመት ይገለጽ)	ከ--- ወር በፊት ከ ----- ዓመት በፊት		
412	ለመጨረሻ ጊዜ ኮምፒውተር የተጠቀሙት መቼ ነበር?	ትናትና ከ3 ቀን በፊት ከሳምንት በፊት ከወር በፊት	1 2 3 4	
413	ኮምፒውተርን ንደኮርስ በትምህርት ቤት ወይም በኮሌጅ ተጠቅመው ወይም ወስደው ያውቃሉ?	አዎ አላውቅም	1 2	
414	ኢሜል አድራሻ አለዎት?	አለኝ የለኝም	1 2	
415	ኢንተርኔት ይጠቀማሉ	አዎ አልጠቀምም	1 2	መልስዎ 2 ከሆነ ወደ ተራ ቁጥር 419 ይለፉ
416	መልሰዎ አዎ ከሆነ ኢንተርኔት ብዙ ጊዜ የት ይጠቀማሉ?	ቤት ኮሌጅ ኢንተርኔት ካፌ ----- ሌላ ከሆነ ይጠቀስ	1 2 3 99	
417	ኢንተርኔትን ለምን አገልግሎት ይጠቀማሉ?	ኢሜል ምርምር/ ጥናት/ትምህርት ለፊልም/ ዜና አንላይን ፎረም ለፋይል ማስተላለፊያ ቻቲንግ ለኮምፒውተር ጨዋ (ጌም) ----- ሌላ ካለ ይጠቀስ	1 2 3 4 5 6 7 99	
418	ኢንተርኔትን ምን ያህል ጊዜ ይጠቀማሉ?	ንዳጋጣሚ በሳምንት አንድ ጊዜ በሳምንት ከ 2-3 ጊዜ በሳምንት 4 ና ከዚያ በላይ	1 2 3 4	
419	በፓወር ፖይንት ጽሑፍ አዘጋጅተው ያውቃሉ?	አዎ አላውቅም	1 2	መልስዎ 2 ከሆነ ወደ 501 ይለፉ
420	መልስዎ አዎ ከሆነ ምን ያል ጊዜ አዘጋጅተው ያውቃሉ?	አንድ ጊዜ ከ2-3 ጊዜ ከ3 ጊዜ በላይ	1 2 3	

አመሰግናለሁ!!!

Annex- II: Information Sheet and Consent Form

Title of the Research Project

Assessment of knowledge and utilization of information technology and associated factors among Bahir Dar health science college students, Bahir Dar, North west Ethiopia

Name of Principal Investigator: Tewodros Demeke

Name of the Organization: School of Public Health, Gondar College of Medicine and Health Sciences, University of Gondar.

Name of the Sponsor: University of Gondar

Introduction: This information sheet and consent form is prepared to explain the purpose of this research in order to get your willingness to participate in the study. The main aim of this research project is to assess the knowledge and utilization of information technology and associated factors among Bahir Dar health science college students. The research team includes principal investigator, six data collectors, two Supervisors and two advisors from University of Gondar.

Purpose of the Research Project: The aim of this study is to assess the knowledge and utilization of information technology and associated factors among students of Bahir Dar Health Science College. Assessing the factors which influence knowledge and utilization of information technology is helpful for policy makers and planners to design appropriate curriculum on IT aimed at improving student's performance on utilizing information technology resources like computers, internet and electronic documents effectively for academic performance.

Procedure: For this study a structured and pretested self-administered questionnaire will be used to assess the students. The study involves regular students of the Bahir Dar College of health science; since you fulfill the criteria, the team has selected you to be one of the study participants. If you are willing to participate, you are kindly requested to give your genuine answers on the prepared questionnaire.

Risk and /or Discomfort: By participating in this research project you may feel that it has some risk or discomfort but there is no major risk or discomfort. To fill the questionnaire it will take you about 10 - 20 minutes.

Benefits: There is no direct benefit to you in participating in this research but it helps us in assessing the factors that affect information technology knowledge and utilization and for policy makers by taking it as a base line to plan ongoing training on IT courses to improve the student's performance on utilization of Information technology for academic purpose in the study area.

Incentives/Payments for Participating: You will not be provided any incentives or payment to take part in this project.

Confidentiality: The information collected from you will be kept confidential. It will be stored in a file using codes, without your name. And it will not be revealed to anyone except the principal investigator. In addition it will be used only for this particular research but not for other purposes.

Right to Refusal or Withdraw: You have the full right to refuse from participating in this research. You can choose not to fill any or all the questionnaires and this will not affect you on using any kind of Information technology related services from your college. You have also the full right to withdraw from this study at any time you wish, without losing any of your right.

Person to contact: This research project will be reviewed and approved by the institutional review board of school of public health, university of Gondar. If you want to know more information, you can contact the following individuals and you may ask at any time you want.

1. Ato Tewodros Demeke,
   Mobile: +251911072708 / e-mail: teddydeme@gmail.com
2. Ato Takele Tadesse, University of Gondar
   Mobile: +2510918773317 /e-mail: takele_tadesse@yahoo.com
3. Ato Telake Azale, University of Gondar
   Mobile: +251918771951 /e-mail: telakea@yahoo.com

የመረጃና የስምምነት ዉል ቅጽ

የጥናቱ ርዕስ

የኢንፎርሜሽን ቴክኖሎጂ ዉቀት ፣አጠቃቀም ና ተያያዥነት ያላቸዉ ሁኔ ዎች በባህር ዳር ጤና ሳይንስ ኮሌጅ ተማሪዎች ላይ፣ ባህር ዳር ፣ ሰሜን ምዕራብ ኢትዮጵያ

የአጥኝው ስም: ቴዎድሮስ ደመቀ

የሚያስጠናው ድርጅት ስም: ጎንደር ዩኒቨርሲቲ፤ ህክምናና ጤና ሳይንስ ኮሌጅ፤ የህብረተሰብ ጤና ትምህርት ክፍል

የጥናቱን ወጭ የሚሸፍነው ድርጅት ስም: ጎንደር ዩኒቨርሲቲ

መግቢያ : ይህ የመረጃ መስጫና የስምምነት ውል ቅጽ የተዘጋጀው ስለ ጥናቱ ዓላማ ለመግለጽና የ ናተን በጥናቱ የመሳተፍ ፈቃደኝነት ለመጠየቅ ነው። የዚህ ጥናት ዋና ዓላማ የባህር ዳር ጤና ሳይንስ ኮሌጅ ተማሪዎች ያላቸውን የኢንፎርሜሽን ቴክኖሎጂ ውቀት ፣ አጠቃቀምና ና ተያያዥነት ያላቸውን ሁኔ ዎች ለማጥናት የ ቀደ ነው። በዚህ ጥናት የጥናቱ ዋና መሪ፤ ስድስት መረጃ ሰብሳቢዎች፤ ሁለት የሚሰበሰበውን መረጃ የሚከ ተሉ ተቆጣጣሪዎች ና ሁለት የጥናቱ አማካሪዎች ይሳተፋሉ።

የጥናቱ ዓላማ: የዚህ ጥናት ዋና ዓላማ የባህር ዳር ጤና ሳይንስ ኮሌጅ ተማሪዎች ያላቸውን የኢንፎርሜሽን ቴክኖሎጂ ውቀት ፣ አጠቃቀምና ና ተያያዥነት ያላቸውን ሁኔ ዎች ለማወቅ ነው። በኢንፎርሜሽን ቴክኖሎጂ አጠቃቀም ላይ ተጽኖ የሚያሳድሩ ሁኔ ዎችን ለይቶ ማወቅ ለፖሊሲ አዉጭዎች መነሻ ሃሳብ ከመስጠቱም ባሻገር ተማሪዎች የኢንፎርሜሽን ቴክኖሎጂን ማለትም (ኮምፒውተር፤ ኢንተርኔት) ለመጠቀም ያለባቸውን ችግር ለይቶ አውጥቶ አስፈላጊውን ቅድ በማውጣት የተማሪዎችን የ ውቀት ደረጃና ክህሎት ለማሻሻል ይረዳል።

የአሰራር ሁኔ (ሂደት) :- በዚህ ጥናት የሚሳተፉ ተማሪዎችን ለመጠየቅ አስቀድሞ የተዘጋጀና ጥናቱ በሙከራ የተፈተሸ መጠይቅ ንጠቀማለን። ጥናቱ መደበኛ የባህር ዳር ጤና ሳይንስ ኮሌጅ ተማሪዎችን ሲያጠቃልል፤ ርስዎ የመግቢያ መለኪያውን ስላሟሉ ለጥናቱ ተመርጠዋል። ለመሳተፍ ፈቃደኛ ከሆኑ፤ ለመጠይቁ የ ርስዎን ውነተኛ መልስ በተዘጋጀ መጠይቅ ላይ ንዲሞሉል ንጠይቃለን።

ሊመጡ የሚችሉ ችግሮች:- በጥናቱ በመሳተፍዎ ችግር ያለው ሊመስልዎት ይችላል። ነገር ግን ሊጠቀስ የሚችል ምንም ዓይነት ችግር የለውም። መጠይቁን ለመሙላት ከ10-20 ደቂቃ ሊወስድ ይችላል።

ጥቅሞች:- በጥናቱ በመሳተፍዎ ምንም ዓይነት ቀጥተኛ ጥቅም አያገኙም። ነገር ግን በተማሪዎች ላይ የኢንፎርሜሽን ቴክኖሎጂ ውቀት ፣ አጠቃቀም ላይ ተጽ ኖ የሚያሳድሩ ሁኔ ዎችን ለማወቅና ለፖሊሲ አውጭዎች መነሻ ሐሳብ መበስጠት የተማሪዎችን ውቀትና ክህሎት ለማሻሻል ተከ ይ ስልጠና ና ቅድ ለማውጣት ይረዳል።

የማካካሻ ክፍያ (ስለተሳትፎዎ ክፍያ):- ስለተሳትፎዎ ምንም ዓይነት ክፍያ አይከፈልዎትም።

የመረጃው ሚሥጥራዊነት፡- ከ ርስዎ የሚሰበሰበው መረጃ ሚስጥራዊነቱ የተጠበቀ ነው፡፡ ስምዎ ወይም ርስዎን ማንነት ለመለየት የሚያስችል መረጃ አይጠየቁም፡፡ መረጃው የሚቀነጠው በሚስጥራዊ ኮድ ነው፡፡ ጥናቱን ከሚሰሩት ሰዎች ውጭ መረጃው ለማንም አይሰጥም፡፡ መረጃው ለ ቀደለት ጥናት ብቻ ይውላል፡፡

የመውጣት (ማቋረጥ) መብት፡- በጥናቱ ያለመሳፍ መብትዎ የተጠበቀ ነው፡፡ ማንኛውንም መመለስ ያልፈለጉትን ጥያቄ ወይም ሁሉንም መመለስ ካልፈለጉ ንዲመልሱ አይገደዱም፡፡ ባለመመለስዎ በኮሌጁ በሚሰጠው የኢንፎርሜሽን ቴክኖሎጂ አገልግሎት ላይ የሚያመጣብዎት ምንም ዓይነት ችግር የለም፡፡ ጥናቱን አቋርጠው መውጣት ከፈለጉ ሙሉ መብትዎ የተጠበቀ ነው፡፡

ሊገኙናኟቸው የሚችሉ ሰዎች፡- ይህ የምርምር ፕሮጀክት በጎንደር ዩኒቨርሲቲ የስነ-ምግባር ኮሚቴ ተከልሶ የሚጸድቅ ይሆናል፡፡ ጥያቄ ካለዎትና ተጨማሪ መረጃ ከፈለጉ በማንኛውም ጊዜ ከዚህ በ ች የተጠቀሱትን አድራሻዎች መጠቀም ይችላሉ፡፡

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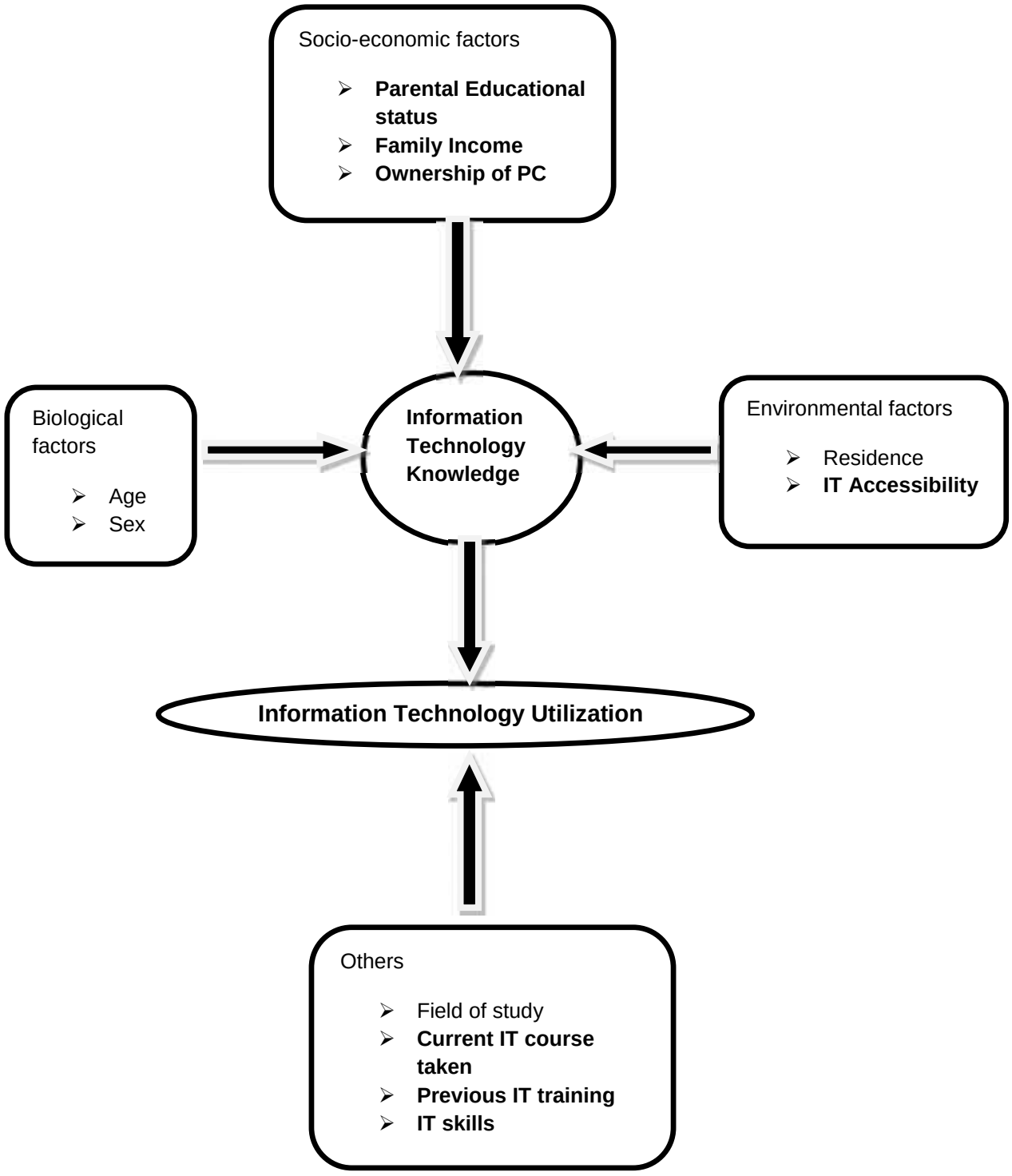
Annex III-Conceptual Frame work



DECLARATION

I, the undersigned, senior MPH student declare that this thesis is my original work in partial fulfilment of the requirement for the degree of Master of Public Health.

Name: ----------

Signature: ----------

Place of submission: School of Public Health, College of Medicine and Health Sciences, University of Gondar

Date of submission: ----------

This thesis work has been submitted for examination with my/our approval as University advisor(s).

Advisors

Name	**Signature**
1. ----------	----------
2. ----------	----------